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# **USSR Report**

**CONSTRUCTION AND EQUIPMENT**

**No. 13**

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## CONSTRUCTION

### PREPARATIONS FOR SUMMER OLYMPICS CONTINUE

#### Progress Chronicled

Moscow ZHILISHCHNOYE STROITEL'STVO in Russian No 3, 1980 p 30

Article by Social Correspondent V. G. Trofimov (Moscow): "Chronicle of the Olympic Construction Projects"

Text Less and less time remains until the grand day of the opening in Moscow of the 22d Summer Olympic Games, more and more Olympic facilities are being put into operation. The end of last year was especially "fruitful."

The construction organizations of the Moscow City Soviet Executive Committee and a number of ministries and departments fulfilled ahead of time the annual program of construction and installation work; a considerable amount of work was performed in excess of the set plan.

The general construction work has been completed at the majority of facilities of the 1980 Olympics. Now the builders are turning over for installation and adjustment the technological and other equipment, complicated domestic and foreign apparatus.

Much has already been readied, and the "breaking in" of the facilities is under way. The Olympic Village has been completely built. It can already now be called a model microrayon of the capital. The installation work, furnishing and the outfitting of a number of facilities of the village with equipment and apparatus are being completed here.

The bicycle track in Krylatskoye held a housewarming. On the eve of the New Year the State Commission accepted this Olympic facility with an excellent rating--the first indoor bicycle track in the country and the largest in the world.

A number of hotels were put into operation. Incidentally, when they have all been put into operation, the available hotels of Moscow will have doubled. A number of Olympic cafes and dining rooms are already in operation. When they have all begun operation, the public dining network of the capital will have increased by 65,000 seats.

The building of the Olimpiada Automated Control System, the first sections of the Television Technical Center imeni 50-letiya Oktyabrya in Ostankino and the stadium in Izmaylovo, the circular road for bicycle road racing and the archery field in Krylatskoye have been put into operation.

Such major facilities as the international post offices and the telegraph office and a number of others are among those put into operation at the end of last year.

During the first days of the new year the regular conference of the city commission for the preparation for and the holding of the 1980 Olympic Games was held in the Moscow City Committee of the CPSU. The conference reviewed the progress of the work on the preparation of hotels and hostels for accommodating the participants, tourists and service personnel of the 1980 Olympics, as well as on the preparation of the public dining enterprises of the capital for the games. The conference noted that the organizations of the Moscow City Soviet, the ministries and departments were carrying out the work on the preparation of hotels and hostels in accordance with the plan.

The new Sport and Sevastopol' hotels have been put into operation. The construction of the Molodezhnaya and Salyut hotels and of two buildings of the hotel complex in Izmaylovo has been completed. In all 10 hostels have been built and put into operation. The repair of a number of operating hotels and hostels has been completed. Now they are being fitted out with new furniture and equipment, the interiors of the buildings and the adjacent grounds are being put in order.

At the meeting in the Moscow City Committee of the CPSU it was noted that the material and technical base of public dining is being expanded in order to serve the participants and visitors of the 1980 Olympics. In the past three years 53 permanent and 44 temporary enterprises have been put into operation. The State Commission has accepted all five of the public dining enterprises at the Olympic Village.

Today let us visit the two new hotels of Moscow.

#### The Salyut Hotel

The word Salyut--the name of the new Moscow hotel--flashes high in the sky of the capital, at nearly the 100-m mark. It is beautifully situated where Prospekt Vernadskogo joins Leninskiy Prospekt and encircles on the southwest the microrayon of Troparevo, which is unique in its own way. Here all the apartment houses and cultural and personal structures were built from standardized items of the Uniform Catalog. Muscovites, I dare say, have already become accustomed to this. But then the 26-story building, which was assembled in a record short time from these standardized parts, is a novelty. For the first time in the practice of capital housing building a building of complex configuration, of such a great volume and height has been built from items of the Uniform Catalog. This is the great service of the builders of the brigade of S. Kazakov from the experimental Installation Administration

No 1, the brigade of carpenters of M. Abramov and I. Simkin and the brigade of electricians of D. Danichev from the Moscow State Trust of Foundation Construction No 8 and the Moscow State Electrical Installation Trust No 1.

And, finally, in speaking about the achievements of the builders, it is impossible to forget the collective of the Karacharovo Plant of Reinforced Concrete Items of the Prokatdetal' Scientific Production Association. It was never only a performer. The collective of the Karacharovo Plant has been the main participant in all the developments.

And now, when we admire the architectural appearance of this unusual building, the plastic art of its facades, the color solutions, the design of the main entrance, the granite stylobate, the originality of the plan of the central section and of the side wings, the restaurant building--in short, the entire hotel complex, it can be said that the designers, the builders and the workers of the plant worked very well here.

The Salyut Hotel is convincing evidence of what enormous possibilities the Uniform Catalog of standardized items has when used skillfully, thoughtfully and creatively. It remains to be added that more than 2,000 people can be accommodated in the cosy, excellently furnished and comfortable rooms of the Salyut. In the hotel there are also many service facilities, there is a cafe on the top floor and an underground garage for 50 tour buses.

Light blue is the color of the 1980 Olympics. The white and blue Salyut Hotel is one of the first Moscow buildings, which will greet the visitors of the capital, who have arrived for the Olympics at Vnukovo Airport.

#### The Sport Hotel

This hotel has its own purpose. During the 1980 Olympics judges from many countries of the world will move into it.

The hotel seems small. Barely more than 400 rooms are in it. Each of them is designed for one or two people.

But the building at the intersection of Leninskiy Prospekt and Ulitsa Udal'tsova has risen 22 stories. This is explained by the greater comfort of the hotel. Everything is provided for here to create the maximum conveniences for the residents. The spacious rooms, the comfortable halls and lounges, the comfortable and beautiful furniture, the carpets.

Services take up the first floors in the hotel. Here, in the foyer, spaces are envisaged, where it is possible to arrange small exhibits on the achievements of the sportsmen of various countries. The conference hall with seating for 500 with a wide-screen movie projector and a platform is convenient and beautifully decorated. Here press conferences will be held, films will be shown and concerts will be arranged.

The press center is close by. It is equipped with devices which make it possible to relay a simultaneous translation from four foreign languages.

The hotel has an international telegraph office with teletypes, pay telephones and booths for translators.

In the restaurant, which is comfortable and well decorated, 600 people can be seated simultaneously. There are a bar, two banquet halls and offices here.

After the 1980 Olympics Soviet and foreign sportsmen, who come to meets in Moscow, will live in the Sport Hotel.

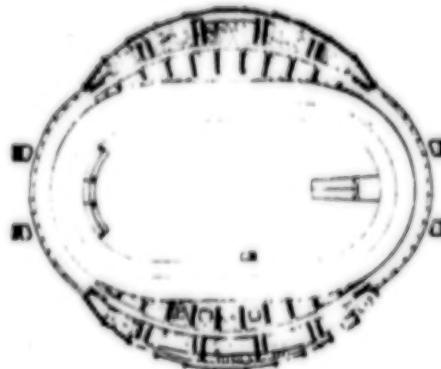
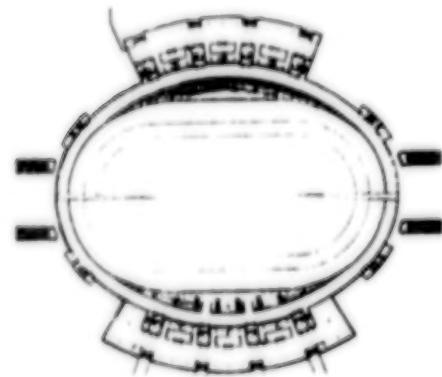
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#### Indoor Bicycle Track

Moscow STROITEL'STVO I ARKHITEKTURA MOSKVI in Russian No 3, Mar 80 pp 10-13

Article by T. Bykovskaya: "The Wings of Krylatskoye"

Text On pages 10-13 we are publishing a selection of photographs on one of the most interesting facilities of the 1980 Olympics--the indoor bicycle track in Krylatskoye. The photographs and sketches are accompanied by a narrative about what the new sports structure of the capital is and tell about its exterior appearance and interiors.



Sketches of the Indoor Bicycle Track



Exterior of the Bicycle Track

Having crossed the threshold, we were instantly carried from the winter day into the festive, Olympic midday. This impression was especially unexpected and striking, for neither the peaceful snow-covered hills of Krylatskoye nor even the silhouette of the bicycle track itself, which was powdered with snow, prepared us for this. We entered the building at the 6-m level, from which it is perceived as a light sculptural volume which has been inscribed organically in the park sporting zone. This level made it possible to

sense the horizontal position of the theme and of its main planar parameters--the sculptured roof of the track covers a field measuring 168 X 138 m. The height of the structure, which reaches 24 m, does not weight upon the spectator, you do not sense its vastness from the facade--but, after all, this is the height of an eight-story building!

The proportions of the hall and its most functional volume, which is subordinate to the main theme--the bed of the track--are very good. The stands (they are designed for 6,000 spectators), which are located along the zones of slow traffic, in spite of their large number, do not hamper at all the perception of the purity of the theme and play a secondary role in the interior.

The gigantic strips of the lined ceiling, which copy the silhouette of the sculptured roof of the building, emphasizing its structural essence, promote the plasticity of the interior and the richness of its forms.

Not only the richness and plasticity of the silhouette of the structure, but also the felicitous warm color range of the painting of the exterior and interior contours, the cantilevers of the stands, the lined ceilings of the vestibules, the covering of the floor between the track and, finally, the color dominating over everything--the color of the track, which is made from domestic larch--create the impression of overall joy and festiveness.

Through the stained glass windows the sun rays light up the bright paints, which were introduced by the designers for mounting the structural and functional components. We will return again to the components which are so aptly used in this structure.

It is necessary to note that an unquestionable achievement of the authors of the plan is the fact that only domestic materials have been used in building the bicycle track.

But now a little of the history. In the contest, in which the main sports structures for the 1980 Olympics were reviewed, this work was commended with a prize.\*

It was decided to situate the first indoor bicycle track in our country on the floodplain section of the sports zone of Krylatskoye, between the Grebnyy Canal and the elevated plateau. The specific address of the future

\* The plan was drawn up at Workshop No 6 of the Moscow Scientific Research and Planning Institute of Facilities of Culture, Health and Recreation (I. Vinogradskiy, institute director), the architects were N. Voronina and A. Ospennikov; the designers were V. Khandzhi, Yu. Rodichenko, V. Borodin, I. Lisitsyn and M. Savitskiy; the designers of the zones were architects A. Vorontsov, T. Zavalishina and V. Rubtsov; the technologist was A. Zychankov. The construction was performed by organizations of the USSR Ministry of Installation and Special Construction Work.

structure--in the sports, and also the outing zone, the recreation zone, next to the large green tracts of the Serebryanyy Pine Forest and the Filevsko-Kuntsevskiy Park--aroused among the authors the desire to make the structure commensurate with man and to create a silhouette of the building, which is not incongruous with the park architecture. Here the search for the functional structure of the building remained the main direction in the designing. Let us also recall, incidentally, the rigid deadlines within which it was necessary to erect the complex facility.



Interior of the Indoor Bicycle Track

The felicitous, functionally precise body of the structure helped to solve all the main problems. The design of the roof of the bicycle track is also involved in the creation of the rich plastic silhouette of the building. It has been worked out in the form of two saddle-shaped membrane shells, which are secured to sloping hingeless arches with a span of 168 m each, which have a channeled cross section of 2 X 3 m. The abutments of the arches of each shell are connected by tie beams. The exterior arches in the central section of the span rest on the cantilevers of the stands, while the interior arches are connected by ties into a spatial block and do not have intermediate supports.

The membrane roof is made from rolled welded steel panels 4 mm thick, which are rolled out on the entire span being covered in a section 740 X 6 mm, which runs from the steel strips, and which are located at intervals of 6.3 m. It is typical that the bearing and the enclosing functions are combined in a single structural component of the roof--the steel membrane.

In spite of the considerable parameters, the building has been intrinsically inscribed in the topography of the locality. The natural gradients of the topography are used for separating the streams of athletes and spectators; the set of facilities for serving them are located on different levels.

The precise division of the building into two volumes--the bicycle track as such and the auxiliary block of gymnasiums, general facilities and engineering services--promoted the shortening of the construction period. Therefore the construction was carried out simultaneously in several sections.

The quality of the plan was supported by the quality of the work of the builders.

One of the acknowledgements of the services of the collective of builders in first place in the socialist competition among the collectives of the Olympic facilities of the city according to the results of the fourth quarter of last year and the Challenge Red Banner.

This complex structure, which completely conforms to international requirements, was put into operation on the planned date practically without unfinished work.

The surface of the bikeway of the track (its length is 333.33 m, width--10 m, angle of inclination of the turns--42°, the radius of the turns--33 m, the angle of inclination of the straight sections--11°, their length--37.07 m), which is made from Siberian larch, affected the speed of the racers--world records have already been set here. The seats for the spectators have also been tested--a good view of both the course of the meets and the two-sided information display board, which is suspended from the ceiling in the center of the hall, is ensured from any of them.

A medical and rehabilitation center with saunas, massage rooms and medical offices, four gymnasiums, a cafe and a network of bars, which are fitted

out with modern equipment, facilities for the work and relaxation of the athletes, groups of judges and journalists, developed communications and information services, an air conditioning system—all this creates comfortable conditions for the participants in the meets and the visitors of the 1980 Olympics. And after the Olympics the bicycle track will be used as an educational training and methods center of the ADCCTU for the following types of sports: cycling, fencing, sports and artistic gymnastics, basketball, volleyball, ping pong. The surface of the space between the track provides an opportunity to transform the entire field for a track and field training program.

The group of dressing rooms (each for two athletes with individual bathrooms) can subsequently be transformed into a comfortable hostel of the hotel type for foreign athletes. Convenient connections with the dining block, the developed medical and rehabilitation center and the sports nucleus of the complex have also been thought out. The immediate vicinity of the bicycle track to the bicycle racing zone on the hills of Krylatskoye is also a significant convenience for the cyclists.

In speaking about the bicycle track, it is impossible not to mention the persistent aspiration of the designers to create a unified system of overflowing spaces, which are subordinate to the main volume. They "admitted" into the interior the sky, greenery and water. For this there are open promenades; for this there is the maximum number of stained glass windows in the spacious foyers; for this there are bay windows in the halls, the gymnasiums and even in the corridors of the medical and administrative zones. As was already stated, the stained glass windows, which introduce into the color range also the color of the sky, are also found in the ceiling of the bowl of the track.

Owing to the view, which opens from the promenades, from the foyers and the halls, the visitors of the bicycle track also become spectators of a number of other contests, equal participants in the mass sports festival of the entire sports zone of Krylatskoye.

About the components, which were already mentioned earlier. Among them are: the spiral stairways—they smooth out the contrasts of the volumes, enliven the interior; ramps, over which the cyclists can descend directly into the gym; the shock-absorbing partition of the bikeway; colored aluminum edging, which is used in different versions, and so on.

The title of this article was also suggested by a component, which no longer depended on the will of the designers of the bicycle track; for Krylatskoye is the name of a former village, therefore it is possible to consider it an apt coincidence that now an interesting sports complex has been built here, where in the environment of magnificent nature it is possible to see and hear how the blades of the oars of the rowers fly up, how the wind whistles in the winged arrows of the archers and the invisible, but perceptible wings behind the backs of the cyclists, who are taking off on the turns of the bicycle track.

However, the building itself evokes among the spectators "winged" associations--the first indoor bicycle track of its size in the world is reminiscent either of a gigantic butterfly or of an interplanetary spaceship.

But the owners and the visitors of the building of the bicycle track will undoubtedly note that it was built enthusiastically, joyfully, as if in one breath, and, consequently, inspiredly.

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### Minsk Facilities

Moscow STROITEL'STVO I ARKHITEKTURA MOSKVI in Russian No 3, Mar 80 pp 14-16

/Article by Candidate of Architecture S. Filimonov and Candidate of Architecture N. Shmidt: "Minsk in the Orbit of the 1980 Olympics"

*[Text]* The capital of the Belorussian SSR, the hero city of Minsk, is one of three cities of the country, in which elimination games of the soccer tournament of the Olympic Games will be held. Along with Leningrad and Kiev intensive preparation for this outstanding event in sports life is being carried out in Minsk.

By chance was Minsk selected. Here 21 stadiums, 308 gyms for various purposes, 21 swimming pools, 174 skiing centers, 143 shooting ranges and more than 1,000 other outdoor and indoor sports structures are at the disposal of those engaged in physical culture and sports.

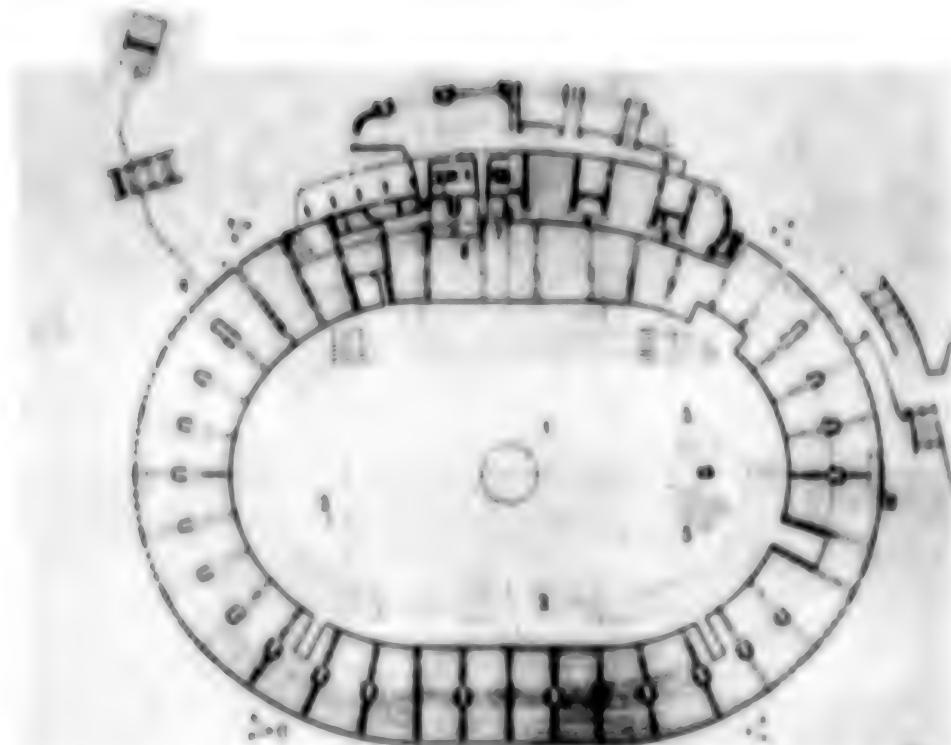
Of course, the Dinamo Stadium, at which the preliminary elimination games of the Olympic soccer tournament will be held, is arousing the greatest interest.

The stadium is located on Ulica Kirova, near the main thoroughfare--Leninetsky Prospekt. The main approaches to the stadium are along Komsomol'skiy Boulevard and Ulica Sverdlova.

The construction of the stadium was included in the plan of the postwar reconstruction and development of the city. The start of its construction dates from 1947. It was carried out according to the plan of architects N. Koll, V. Vol'fenson and N. Shmidt. In addition to the stadium the location of a swimming pool, sports fields, a cafe and a dance floor was envisaged on the site of the stadium with an area of 9 hectares. Tree and shrub plantings occupied an important place, which is why the entire complex was often called a park stadium.

The use of the topography was a peculiarity of this stadium. The main western falcate stands were located in a natural incline. The designers achieved a zero balance of the volumes of the removal and addition of earth. The small rectangular eastern stands were located at the ground level of the site, on the same level as the sports nucleus. The dressing rooms of the

athletes and other auxiliary facilities were located in the space under its stands.

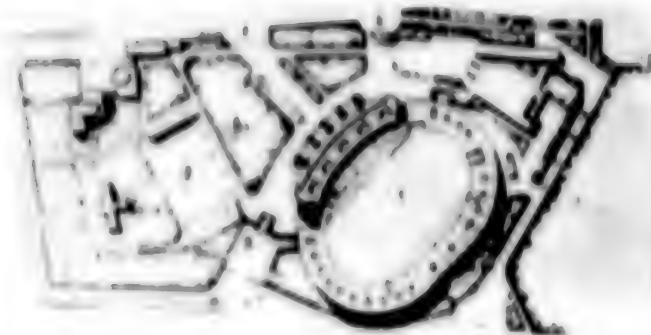


Plan of the Renovation of the Main Arena of the Dinamo Stadium (at the Nominal Levels of -1.63 to +19.80). 1--soccer field; 2--track; 3--sectors for jumps and other types of track and field events; 4--entrance to the judges' facilities; 5--second (new) tier of the western stands; 6--junction platform of the second tier of the stands; 7--boxes of honorary guests; 8--press box; 9--refreshment area for spectators; 10--electric display board; 11--lighting towers.

A box for honorary guests, which was shaped by a 14-column portico, which is curved in a plane (following the curve of the upper row of the stands), was built in the center of the main stands.



Dinner Studies in Max. Superstructure of the Cape. 31



Dinamo Stadium. General Plan of Renovation of 1977-1978. 1--main arena; 2--stadium for hand sports; 3--refreshment counters; 4--main entrance to the stadium; 5--old main entrance.

Subsequently, starting in 1954, the first renovation of the stadium, which concerned primarily the stands (architects M. Barshch, M. Parusnikov, S. Satunts, V. Sharkova), was carried out. The number of seats was increased from 15,000 to 40,000-42,000 by the creation of a closed oval. The auxiliary facilities were remodeled, a new entrance was built, the civic improvement of the grounds was carried out.

The stadium existed in this form under 1977, when in connection with the decision of the Olympic Committee it was again remodeled, this time radically (architects S. Botkovskiy, L. Gel'fand, L. Gaukhfel'd, Yu. Spesivtsev; engineers G. Rodikov, A. Barakovskiy). The superstructuring of the second tier of the western stands was carried out, which made it possible to increase the number of seat by another 10,000. A number of facilities and installations, which are necessary in accordance with modern sporting technology requirements, were removed from under the new stands and arranged in the three floors of the volume adjacent to it. If we take the mark of the surface before the entrances to the stands to be 20.00, the upper floor is at the mark of +1.63, the floor on the level of the upper row of the old stands is at the mark of -1.63, while the ground floor is cut into the ground to the mark of -6.13.

The roof of the facilities of the second floor of this volume serves as the junction platform for the spectators of the second tier of the stands. The platform is located at the mark of +5.7 and is connected with the plane of the adjacent area by five wide stairways.

A number of new projects are being built in the stadium complex: the building of the official delegation of the 1980 Olympics, a stadium for hand

sports with stands seating 8,000, tennis courts with stands for 3,000 spectators, a shooting range, additional entrances, refreshment counters, parking lots and restrooms. The site of the stadium has been enlarged at the expense of the grounds adjacent to it on the southwest. The pedestrian approaches to the arena have also been organized in a new way.

The external appearance of the structure has also been completely changed. Only the arch of the old entrance and the arcade of the eastern and circular (North-South) stands are reminiscent of the old stadium.

The authors of the remodeling successfully used many advanced trends and achievements of domestic sports architecture. In particular the design solution of the superstructure of the western stands continues and develops the ideas which were embodied in the construction and remodeling of the stands of the stadiums in Kiev, Krasnoyarsk, Yerevan, Tbilisi, Volgograd and other cities.

The upper rows of the ridge of the new stands, which have been extended on cantilevers, create a unique spatial plastic form, which visually is unmistakably perceived as the image of a large sports arena. At the same time in Minsk, as at the majority of the other mentioned arenas, the nature of the solution of the form remains individual and original.

Among the other sports structures of Minsk, which have gained wide renown far beyond the republic, a prominent place is held by the general-purpose sports and spectator hall built in 1963-1966 (architects S. Filimonov, V. Malyshov, engineer V. Korzhevskiy), which marked the beginning of a new layout and volume-spatial solution of this type of building in our country.

The building is presently being renovated (architects S. Filimonov, V. Shcherbina, engineer B. Ganner). Not only the capital repair, the replacement of many components of the equipment, structures and decoration within the building itself, but also the covering of the existing outdoor hockey field and the civic improvement of the grounds of the entire complex, which belongs to the zone of the Park Thoroughfare of the city, are envisaged.

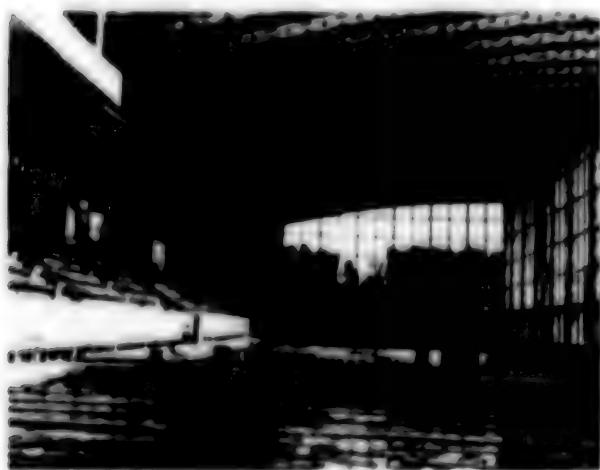
The largest educational center in the republic for the training of highly skilled athletes, teachers and trainers--the complex of the Institute of Physical Culture (architects V. Afanas'yev, G. Fedosenko; engineers D. Yanko, B. Milyutinskaya)--is being erected here, in the picturesque region of the Park Thoroughfare.

This complex with a total volume of the structures of 620,000 m<sup>3</sup> is located on a site with an area of 47 hectares. The horseshoe-shaped composition includes a number of indoor and outdoor planar structures: the 7-story main educational building, the 16-story student dormitory housing 1,600, the sports building with 9 gyms, the track and field building measuring 133 X 48 m, the indoor swimming pool with a 50 X 25 m pool, a dining room seating 360 and an assembly hall seating 700. The main sports nucleus with a 400-m track, a soccer field and stands for 8,000 spectators, a track and

field stadium, six soccer training fields, stadiums for hand sports and other planar sports structures are also planned for the site.

The volume-spatial composition of the complex is base on a contrast of the low enclosed circle, which is formed by the interlinked buildings of the educational structures, and the vertical volume.

The water sports complex at the Park of Culture and Rest imeni Chelyuskin-ites, which was built in 1966-1967 (architect O. Ladygina; engineers I. Zubitsker, S. Lifshits), is widely known. Its main structure is the Palace of Water Sports, which includes three indoor pools with all the necessary auxiliary, ancillary and technical facilities, as well as stands for 1,500.



Interior of the Palace of Water Sports

Outdoor swimming pools with a total water surface area of 3,200 m<sup>2</sup>, areas for resting and solariums are located near the Palace of Water Sports.

It is planned to complete the renovation of this complex in the early 1980's. The plan envisages the construction of three training halls for the general physical and strength training of athletes, an indoor swimming pool for teaching children to swim, a rowing pool, as well as the building and expansion of several service facilities--the medical and rehabilitation center, the dressing rooms, the judges' rooms, the press center, the cafe, the vestibule and others. A hotel to accommodate 250 will be built at the complex.

The opening in 1974 of the sports complex in Raubichi near Minsk (architects V. Aladov, S. Neumyakin; engineer M. Gordon; technologist N. Medvedev) was

a significant event in the sports life of the city. An administrative and general building, a judges' pavilion, an electronic display board, the medical and rehabilitation center, a shooting range, ski paths and three ski jumps were built here. The construction of a number of outdoor sports fields for various purposes is in prospect.

Among the sports facilities, which are intended for educational and training work and the holding of meets in track and field, competitive and other types of sports, we should mention the Palace of Track and Field in Uruch'ye and the sports complex of the Dinamo VFSO at Komsomol'skoye Lake.



Exterior of the Track and Field Building in Uruch'ye

The Palace of Track and Field, which was built in 1977 (architects N. Kavko, V. Isachenko, V. Krishchanovich; engineers M. Kachan, I. Meylakh, E. Bar-tash), is now the largest sports structure of this type in the republic. The dimensions of the gymnasium--126 X 48 m--make it possible to easily place in it a four-lane 200-m round track and a six-lane 100-m straight track, as well as stands on one side for 3,000 spectators. The parameters of this building make possible the holding here of sports meets of the highest class.

The roof of the building is made from hinged block trusses, which form a cylindrical arch with a span of 48 m. The basic volume, which was solved simply and at the same time monumentally, its external appearance and the interior of the gymnasium and lobbies as a whole create a good impression, although they are supersaturated with respect to color.

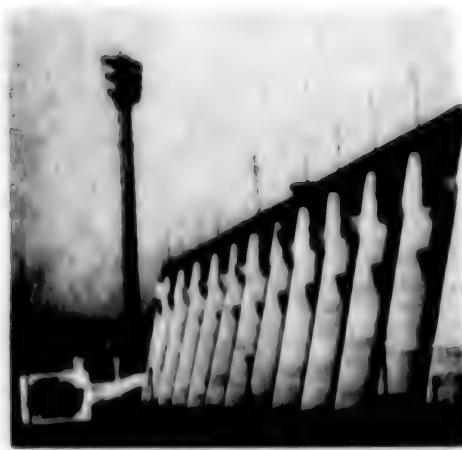


Interior of the Palace of Track and Field in Uruch'ye

The large multipurpose sports complex of the Dinamo VFSO in the region of Komsomol'skoye Lake (architect S. Filimonov; engineer G. Petrukovich) was put into operation in early 1978. A track and field building measuring 123 X 34 m with a four-lane 200-m circular track and a two-lane 100-m straight track and stands for 400, two interconnected gymnasiums (game and gymnastic) measuring 42 X 24 m each, service and auxiliary facilities are included in it. The building here of a swimming pool with a 50-m pool, two specialized gymnasiums for wrestling and boxing, a medical and rehabilitation center and a box for sports judges is proposed in the future. After the completion of the construction of the complex its facilities, which are united by systems of communications and pipelines, will be a complete architectural ensemble. The total area of all the structures will be about 120,000-140,000 m<sup>3</sup>.

The sports complex, which is taking shape within the training base of the Belorussian SSR Committee for Physical Culture and Sports in Stayki near Minsk, is of great interest. It includes a soccer building (architect N. Drosdov; engineer G. Petrukovich) and the building of the multipurpose sports gymnasium being added on to it, which is near completion (architects P. Pugach, V. Mashukov; engineers G. Petrukovich, G. Kashchenko).

Educational and training exercises in all competitive and applied types of sports will be conducted in the building of the general-purpose sports gymnasium measuring 50 X 72 m, the total volume of which is in excess of 41,000 m<sup>3</sup>. The roof has been designed from laminated wood arches with a span of 49 m and is one of the examples of the use of laminated wood components in the domestic practice of sports construction.



#### Exterior Appearance of the Stands of the Traktor Stadium

In concluding the survey of the most significant sports structures of Minsk it is necessary to dwell on the indoor tennis courts, which were built in early 1978 and are located along the Park Thoroughfare (architects S. Botkovskiy, L. Gel'fand; engineers V. Skabelkin, G. Rodikov). The narrow specialization of the structure determined its volume-spatial solution and the principles of natural and artificial lighting. The gymnasium is covered by a cylindrical arch, the curvilinear form of which was dictated by consideration of the flight trajectory of the ball. The roof was made from double-curved reinforced cement shells with a span of 40 m. Permanent stands for 480 and 4 playing areas measuring 20 X 40 m each are housed in the gymnasium. Convertible stands for an additional 800 seats can be installed as required. The total volume of the structure is 62,500 m<sup>3</sup>.

The facilities, which were told about here, far from exhaust all the work of the architects of Minsk in the area of sports construction in recent years. But the examined examples show the broad scope of the creative search of the architects of the capital of Belorussia and attest to the progressiveness and novelty of the ideas, which are being incorporated by them in the volumetric and layout decisions.

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Communications for Olympic Facilities

Moscow MEKHANIZATSIYA STROITEL'STVA in Russian No 4, 1980 pp 9-12

Article by I. D. Davidson, engineer of the Stal'montazh Trust of the USSR Ministry of Installation and Special Construction Work, Yu. D. Kulikov, engineer of the Construction Mechanization Department of the USSR State Committee for Construction Affairs, and A. A. Taranovskiy, engineer of the Proyektmontazhavtomatika State Planning Institute of the USSR Ministry of Installation and Special Construction Work: "The Operations Control Communications Complex at the Building Site of the Olympic Facilities"

Text The introduction of systems of technological production control and communications began at the construction site of a number of major projects starting in the late 1950's for the purpose of ensuring the efficient operation of construction machinery and motor transport, as well as for effective management during the performance of construction and installation work and for increasing labor productivity and safety. These operations were performed at such projects as the Kuznetsk Metallurgical Combine imeni V. I. Lenin, the Kremlin Palace of Congresses, the Rossiya Hotel, the CEMA building, the Ostankino television tower in Moscow, the plants of the Volga Motor Vehicle Plant in Tol'yatii and the complex of plants for the production of heavy trucks at Naberezhnyye Chelny, the complex of the Novolipetsk Metallurgical Plant.

On the basis of the experience gained at these construction projects when performing work on the creation, introduction and use of the technological production control of the projects with the use of means of radio and wire communications the Proyektmontazhavtomatika State Planning Institute jointly with the Stal'montazh and Promsvyaz'montazh trusts of the USSR Ministry of Installation and Special Construction Work, the Orsha Krasnyy Oktyabr' Plant and the Electrical Communications State Inspectorate of the USSR Ministry of Communications created three pilot operations control communications complexes (ODKS's). The goal of the creation of the ODKS's consisted in providing construction and installation organizations with means of radio and wire communications during the performance of installation work at construction projects.

The created complexes made it possible in the shortest possible time to develop and put into operation a communications system at the large construction project, to ensure radio communications between the dispatcher, the engineering and technical personnel and the brigade leaders, trilateral communications according to the system "slinger-crane operator-installer" during the operation of cranes, as well as telephone communications on the grounds of the project and search and control communications with an outlet to the city automatic telephone exchange.

The provision of the dispatcher, the engineering and technical personnel, the brigade leaders, the crane operators and the installers with means of radio and wire communications and the transfer of the dispatcher service directly to the construction site of a large industrial or civil complex ensure a considerable increase of the efficiency in the solution of many questions which arise in the construction process, the improvement of the use of machinery and motor transport, the improvement of the complete supply of components to projects under construction and the increase of labor productivity and safety.

Two operating prototypes of the ODKS were successfully introduced by the installation administrations of the Stal'montazh Trust in 1977-1979 at the construction site of the largest facilities of the 1980 Olympics: the indoor stadium for 45,000 spectators on Prospekt Mira and the hotel complex in Izmaylovo.

The use of ODKS's at these projects is not accidental in connection with the fact that they are unique both in technical complexity and in the amounts and deadlines of the performance of the work. At such projects it is easier to determine the efficiency from the introduction of such developments, to identify in the process of operation the design drawbacks for the making of changes in series-produced ODKS's.

The introduced ODKS's are mobile heated facilities of the container type (Figure 1 /photograph not reproduced/), in which the set of communications equipment has been installed and assembled.

The set of the ODKS includes (Figure 2):

radio transceivers like the Kaktus or Lastochka, which are intended for installation on the cranes and in the offices of the construction superintendent, as well as are carried by the engineering and technical personnel and the brigade leaders;

a small-capacity automatic telephone exchange like the KATS-R-40 for 40 subscribers for the organization of wire communications between all the services taking part in the construction;

a control panel like the PUVS-65RTS, which ensures the connection of the radio users with the users of the internal and city automatic telephone exchanges (Figure 3 /photograph not reproduced/);

a radio relay center for search communications and reporting;

equipment for charging the batteries of the radio transceivers;

a radio relay center.

The premises of the ODKS are provided with special technical furniture and safes for the storage of the radio transceivers and are equipped with a special security alarm system.

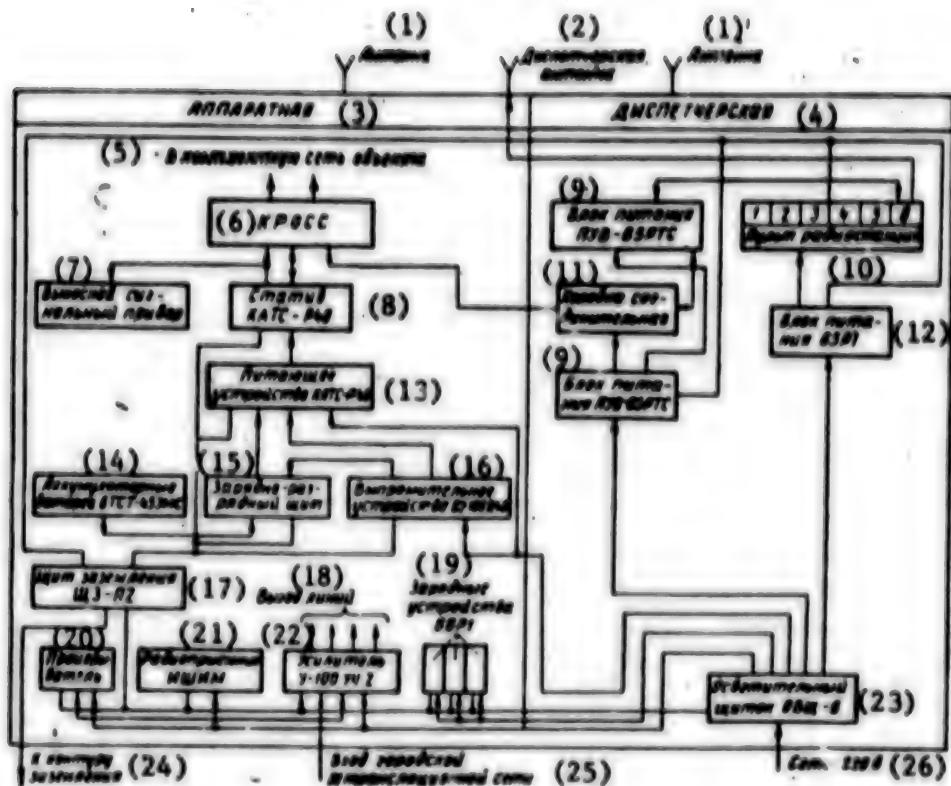


Figure 2. Block Diagram of the Connections of the Equipment of the ODKS

Key:

1. Antenna	14. 6TST-45EMS storage batteries
2. Dispatch antenna	15. Charging and discharging board
3. Control room	16. VU-100/246 rectifier
4. Dispatch room	17. Shch3-P2 grounding panel
5. To the self-contained network of the project	18. Outlet of lines
6. Terminal room	19. 66R1 chargers
7. Carried alarm	20. Record player
8. KATS-R40 stand	21. IShIM radio receiver
9. PUV-65RTS power pack	22. U-100 UCh 2 amplifier
10. Panel of radio transceivers	23. OVShch-6 lighting panel
11. Junction box	24. To grounding circuit
12. 65R1 power pack	25. Input to city radio relay network
13. KATS-R40 power supplier	26. 220-V circuit

For the construction of the hotel complex in Izmaylovo the Electrical Communications State Inspectorate allocated six radio frequencies. Of them five of the frequencies were used for communications during the operation

of inclined tower cranes like the KB-573. In conformity with the plan of the performance of operations two tower cranes were installed at each building under construction. Each crane was equipped with a set consisting of three radio transceivers which ensure trilateral radio communications between the crane operator, the slinger of the components and the brigade leader of the installers, who is on the assembly floor. The six radio transceivers, with which each pair of cranes engaged in the erection of one building were equipped, operated on the same frequency, but here the radio transceivers on each crane had their individual call letters.

In connection with the fact that a single brigade consisting of two links carried out the erection of each building, such organization of the work enabled the installers and the operators of both cranes, who were at the same building, to always know about the events taking place in each link, as well as afforded them an opportunity to coordinate their actions in the area of the complete supply of components and to ensure communications with the managers of the operations, no matter in what link he might be.

One of the frequencies was intended for production control.

All the senior construction superintendents, the construction superintendents and foremen, the repair services, the personnel engaged in preproduction and the dispatcher were linked by this frequency. One radio transceiver of this frequency was at the disposal of the chief of the complex of installation work.

At the construction site of the indoor stadium seating 45,000 on Prospekt Mira four radio frequencies were put into operation. Of them one frequency was used in much the same way as the preceding project for production control by the installation organizations, a second frequency was used for communications between the general contracting construction administrations. Each engineering and technical worker of the installation organization, who had a radio transceiver with him, at any time could be connected through the dispatcher of the ODKS with the engineering and technical personnel of the general contracting administrations. The link-up of the workers of the installation administration with the engineering and technical personnel of the general contracting administrations was also accomplished via the telephones of the internal automatic telephone exchange with an outlet to the radio users--the engineering and technical personnel of the general contractor.

Two frequencies were used in the installation of components for communications when operating the cranes.

Radio communications played an important role in the process of installing the metal components of the roof of the bowl of the stadium, where installation without radio communications would have been difficult.

The installation of blocks, which consisted of two stabilizing girder which were made rigid when being lifted by a special tie beam, was carried out

when constructing the roof of the bowl of the stadium. The planar dimensions of the block being lifted reached up to 90 m in length and 10 m in width. The weight of the block amounted to 90 tons.

The installation of the consolidated blocks was carried out by a BK-1000 tower crane (Figure 4 [photograph not reproduced]), which was installed in the center of the gymnasium, and by a sheerlegs erector with a lifting capacity of 50 tons (Figure 5 [photograph not reproduced]), which was moved over tracks laid on the exterior supporting ring. The blocks of the roof were raised from two assembly benches, which were arranged along the length of the axis of the elliptical contour of the bowl (the dimensions of the ellipse along the axes of the building are 224 X 164 m). The delivery and installation of the blocks being installed were accomplished by turning the boom of the tower crane and moving the sheerlegs along the exterior ring. In the installation process the sweeps of the booms of the cranes and the heights of the placement of the block being lifted constantly changed.

For the operations on the installation of the blocks of the roof up to 10 radio transceivers on one frequency were put into operation to ensure the safe performance of the work and the precision of the securing of the components. The director of the hoisting, the operators of the crane and the sheerlegs, the construction superintendents who were at the four supporting joints of the block being installed, the brigade leaders of the installers, who directly carried out the securing of the block, and the mechanic responsible for the technical condition of the cranes were furnished with radio transceivers. A representative of the planning organization, to whom information came from the workers ensuring the installation and securing of the components, took part in a number of lifts.

The use of the ODKS made it possible to expedite considerably the performance of repairs on construction machinery. For example, in case trouble with some unit arises, the operator does not need to get down from the crane and look for repairmen.

Having received information in good time from the operator via radio, the repairman mounted the crane and, having determined the trouble, remedied it; in case of a complex breakdown he had an opportunity through the dispatcher of the ODKS to turn to the electrician on duty or to the section of the administration of mechanization.

Due to this it was possible to reduce the total downtime of the cranes for technical reasons by approximately 30 percent.

The use of the ODKS reduced the idle time of motor transport. Having received information about the arrival of some cargo, the dispatcher got in contact with the performers of the work and sent it directly for installation, but if an opportunity for this did not present itself, he found a place for this cargo in the warehouse.

By means of the ODKS it is possible via loudspeaker communications and dynamic loudspeaker bells, which have been installed on each building, to relay information and retransmit radio broadcasts.

The ODKS served the construction site during three shifts: two people during the day, one each on the evening and night shifts. The number of operators was determined from the condition that during the day the receipt and broadcasting of information are more significant.

The rate of construction after putting the ODKS into operation increased. With a planned daily assignment of 24 lifts per crane, in fact the number of lifts reached 35-45.

The need disappeared for signallers, who previously due to the lack of direct visibility carried out the communications of the installers with the crane operators, in connection with which the number of installers in each brigade decreased: five people worked instead of six. This made it possible, for example, for the construction project of the hotel complex in Izmaylovo as a whole to release 25 people.

The operation of ODKS's at the Olympic projects in Moscow showed that the complex makes it possible to ensure the performance of the work in conformity with the weekly and daily schedules, the precise and efficient work of construction organisations, including the general contractor, all the subcontractors, materials-handling machinery, motor transport, the services of supply and assembling.

As a result of this an increase of labor productivity was achieved, workers (installer-signallers) were released, the precise intercommunications of the crane operators and the installers was ensured, which is especially important in the construction of tall buildings.

The placement of an ODKS into operation at a project can be accomplished in 10-15 days (the installation of temporary communication lines, the lead-in of electric power, the installation of antennas and so on).

The cost of the complex and its installation at one project is from 40,000 to 50,000 rubles.

The annual economic impact from the introduction of an ODKS at the construction site of the Izmaylovo hotel complex for the Stal'montash Trust exceeds 100,000 rubles.

Taking into account the effectiveness of the use of the operations control communications complex in the building of the facilities of the 1980 Olympics, as well as at the construction site of the oxygen converter shop of the Cherepovets Metallurgical Plant, for the more extensive adoption of the ODKS in construction it is necessary for the Proyektmontazhavtomatika State Planning Institute of the USSR Ministry of Installation and Special Construction Work with the involvement of the appropriate institutes of the construction ministries to solve the following problems:

jointly with the Electrical Communications State Inspectorate of the USSR Ministry of Communications to develop for the ODKS a grid of frequencies by regions;

to draft a statute on the procedure of introducing ODKS's at the construction site of the most important projects of the national economy;

to develop a training program for the personnel employed in the operation and repair of the equipment of the ODKS;

to determine the procedure of including operations control communications complexes among the plans of the organization of the construction of the corresponding projects;

to prepare proposals on the procedure of financing the expenditures on the acquisition and operation of the necessary equipment for the ODKS.

The operating operations control communications complex was successfully demonstrated at the intersectorial thematic exhibition "Control-79," which was held in Moscow, and was commended with medals of the Exhibition of USSR National Economic Achievements.

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## CONSTRUCTION

### SHORTCOMINGS, LAGS IN CONSTRUCTION COME TO LIGHT

#### Capital Construction Lags

Moscow STROITEL'NAYA GAZETA in Russian 10 Feb 80 p 2

[Article by S. Sinyutina: "Eliminate Indebtedness"]

(Text) "The shortcomings in capital construction noted at the November (1979) CPSU Central Committee Plenum apply in full to the work of our ministry," said A. G. Bykhanov, RSFSR Minister of Housing and Civil Construction, in a report at a joint, expanded meeting of the ministry board and the central committee presidium of our trade union.

The minister's report and speeches by conference participants contained a detailed critical analysis of work in many construction organizations. There are serious grounds for such criticism. The 1979 plan was met by only 85 percent in terms of total amount of contract work, and 54.5 million rubles was not utilized. Work volume was allowed to drop by 1.5 percent, to the 1978 level. Trusts of the Sevostengrashdanstroy, Dagegrashdanstroy, Kaliningradgrashdanstroy and Amurgrashdanstroy did considerably less than in the preceding year. Only four trusts coped with the annual program. The planned labor productivity growth was not achieved.

Of course, ministry subdivisions have done quite a bit during the first four years of the five-year plan. They put 2.3 million square meters of housing into operation, built schools with places for 43,000 pupils, built children's preschool institutions for 14,000 children, a considerable number of cultural, personal-services and public health facilities, as well as quite a few stockraising complexes. However, the results could have been considerably better had all reserves been brought into play.

Minister A. G. Bykhanov indicated concrete steps which will help correct the situation. We need to radically improve production organization, use machinery more effectively, concentrate material and technical resources at start-up projects, provide construction sites with full complements of personnel, and raise the level of leadership in all links. Better use should be made of the potential of our own base; we should make more extensive use

of vibrobrick panels, asbestos-cement items and other effective components and materials. Monolithic house-building should be developed faster. It is time to finally move from experiments to the extensive introduction of practice-tested methods.

Ministry subdivisions are faced with many responsible tasks in the concluding year of the five-year plan. The amount of contract work must increase 12.3 percent. We are faced with putting into operation 660,000 square meters of housing, which is 121 percent of the amount actually put into operation in 1979. Moreover, we need to release for use 115,000 square meters of total area not introduced last year. The plan is to build considerably more schools, children's day nurseries and kindergartens, polyclinics, vocational-technical schools, clubs and houses of culture. Our most immediate task is to complete all start-up projects carried over from last year.

The ministry collegium and trade-union central committee presidium approved the 1980 socialist obligations adopted by collectives of construction organizations, enterprises and transport.

Participating in the work of the conference were A. N. Kalashnikov, Deputy Chairman of the RSFSR Council of Ministers, A. P. Gromov, sector chief in the construction department of the CPSU Central Committee, Yu. N. Sidorov, RSFSR Gosplan deputy chairman, S. T. Dement'yev, RSFSR Gosstroy deputy chairman, I. A. Lashin, central committee chairman for the trade union of construction and building materials industry workers, V. A. Zhibarev, department head in the RSFSR People's Control Committee, R. P. Rodionov, secretary of our trade union central committee, and other responsible ministry and department workers.

#### Rural Construction Problems

Moscow STROITEL'NAYA GAZETA in Russian 13 Feb 80 p 3

[Article by V. Kapel'kin: "Peripheral Reorganisation"]

[Text] This SSK [rural construction combine] was born way back in December 1972. The combine, first in the RSFSR Ministry of Rural Construction, was created by combining the Kurovskiy Reinforced Concrete Plant and PMK [mobile mechanized column] No 278, which was installing large-panel houses and social-, cultural- and personal-services facilities. The enterprise and construction organization began using a single current account. True, different balances were made for them, because approximately half the ZHBI [reinforced concrete] plant's output was shipped to other PMK's, as it was the only such plant in the Kalugasel'stroy trust.

The combining of industrial and contractor activity yielded an appreciable impact. Within two years after the SSK was created, PMK No 278 had doubled its work volume as compared with 1971. Output had risen by 30 percent. The combine, operating as a general contractor organization, was oriented towards

releasing facilities on a "turnkey" basis. A small finishing-work sector was expanded into the specialized PMK-1146, for which a rather good base was built and equipped. This had a positive result: in 1975, 3,000 m<sup>2</sup> more housing was released than in the preceding year.

The Kurovskiy SSK found itself with rather good prospects for flow-line construction of houses, clubs, kindergartens and schools in oblast villages. However, the winds of change suddenly reversed direction.

On 1 January 1976, the trust ordered that the ZhBI plant be removed from the combine. The single current account was divided up. A director was named for the enterprise, in spite of the fact that the SSK had a chief. A year later, the finishing workers were also taken away. In other words, only a pretext of a combine remained.

The opinion prevailed (as expressed, in particular, by acting deputy trust manager for economics N. Terekhova) that there was no reason to put into the SSK a plant with a products list for the entire Kalugassel'stroy. M. Usik, current director of the Kurovskiy plant, states even more categorically, "The enterprise must be self-contained." You subordinate the plant to the SSK, they say, and the combine will "twist" production to its own products list. And now, they say, there are firm production and output sales indicators and the trust's general schedule of allocations is to produce items.

But things are well only on the surface. In spite of the allocation schedule for the trust, the independent plant is not paying proper attention to producing components for large-panel house building. In 1977, it met the overall reinforced concrete production plan by 104.4 percent, but the SSK was allotted only 73.1 percent of the planned output. This disproportion has continued to the present.

And how can projects be put on a "turnkey" basis if the finishing PMK is removed from the SSK? There are in fact 20 house "boxes" installed in recent years, standing unused. It would be hard to say what they had in mind in the Kalugassel'stroy trust in granting independence to this mechanized column. It was assumed that it would work only on SSK projects operationally subordinate to it.

However, everything turned out differently. After the division, PMK-1146 was converted from an internal subcontractor to an external one. It became incomparably harder for the combine to orient the mechanized column towards end results. Instead of specific jobs, leaders began squabbling among themselves because of shortcomings in the construction readiness of the buildings. Last year, finishers did 80 percent of the program for SSK projects, including only 48 percent at start-up projects. At the same time, they picked up volume at unplanned projects.

In a word, the trust and the SSK could in no way "divide" the ZhBI and the finishing mechanized column between them. But they are parts of a whole

which is called upon to act in unison. Deprived of the plant and the PMK, the combine failed to meet the plan for industrial housing installation. At the same time, the entire Kalugassel'stroy trust was in a fever to make up the shortfall in SSK work, which it had to do by more labor-intensive brick construction.

But the designed capacity of the SSK for large-panel house-building was actually only half utilized. Indicators did not improve; they deteriorated: in 1979, less housing was released than in previous years. And, as could be expected, the proportion of "unfinisheds" soared to record heights.

Planning shortcomings also played a role, of course. For example, installation of an 18-apartment building was stretched out to two years in the plans and schedules -- started and start-up -- while the normative stipulated a total of five months.

What is being undertaken to improve things? According to the "Proposals on Improving Eurovskiy SSE Activity" developed by the TsNIIEPSel'stroy [Central Scientific Research Institute for Experimental Rural Construction Planning] and approved by the union Ministry of Rural Construction, we need to return the ZhBI and finishing mechanized column to the combine. Moreover, we are to create in subcontractor and servicing subdivisions of the Kalugassel'stroy trust six specialized detachments operationally subordinate to the SSK. The proposals are fully substantiated and had already been verified in SSK practice prior to the ill-fated reorganizations.

But deadline after deadline passed, and implementation of the recommendations in the Kalugassel'stroy trust continues to be delayed. They did have the courage to reinstitute mechanized column No 1146 as part of the SSE, as of 1 January 1980, but they have been in no hurry to reunite the combine and the ZhBI plant. As if it were a risky venture into the unknown!

"We also need planning changes. In view of the many 'incompletes,' we are faced with reducing the SSK general contracting program," says combine deputy chief for economics V. Glebov.

Unfortunately, the RSFSR Ministry of Rural Construction does not want to agree to this, as it is not permitting a reduction in the "gross" plan as compared with last year's plan. But will the Kaluga area really continue to be decorated only with building "boxes"? And is it really hard to see that the unsuccessful reorganizations are damaging?

#### General Contractors Cited

Moscow STROITEL'NAYA GAZETA in Russian 5 Mar 80 p 2

[Article by V. Popkov and Yu. Yudin: "Justifying the Name"]

[Text] The huge billboard is easily visible to everyone riding on Yenisey-skii highway. It says: "Krasnoyarsk Heavy Excavators Plant -- Demonstration-

Model Construction Project of the USSR Ministry of Construction of Heavy Industry Enterprises." Here is where the new giant of domestic machine building is going up, some 15 kilometers from the kray center. As has already been reported in STROITEL'NAYA GAZETA, its builders have taken on an obligation to reduce the schedule for erecting the plant 1.7-fold through the use of progressive construction methods, new components and materials and better labor organization.

In 1979, the plan was to basically complete the preparation period at the site: create its own production base, build mains and utility lines and shape the new Krasnoyarsksekshavatoryashstroy combine. The amount of construction and installation work done last year was worth nearly 24.5 million rubles, 102.8 percent of the plan. So that means things are going quite successfully at the construction site?

"The start-up schedules for the first two buildings, set for 1981, are already in serious jeopardy. And it is foremost the fault of the builders," says A. Mamlyutov, deputy director of the enterprise being built.

We agree, it is somewhat strange to hear this appraisal of work on a model-demonstration construction project. Perhaps the client is exaggerating the problem, in a fit of frustration.

There are three general contractors at the construction site today, subdivisions of the Ministry of Construction of Heavy Industry Enterprises, Ministry of Power and Electrification, and Ministry of Transport Construction. The bulk of the work is being done by the Glavkrasnoyarskstroy. The construction-installation plan was met by 116.5 percent. The main administration has been able to do much to live up to its unwieldy name since the first days of construction. Particular attention has been paid to living conditions for the builders: they have created four little cities for them, built a dining hall for 120 people and began building another two dining halls for 300 each. Machine operators from collectives of the Stroymekhnizatsiya trust and the No 7 mechanized earth-moving administration of the Sosyuztyazhekshavatsiya trust have achieved excellent results.

But here, there is a hitch. The percentages of annual plan overfulfillment were largely ensured by "earth," that is, by the work of machine operators. But what about the other subdivisions?

"Unfortunately, we were unable to meet a number of target tasks planned for last year," explains M. Zaslavskiy, Glavkrasnoyarskstroy excavator plant construction administration chief. "That applies first of all to putting housing into operation."

The second general contractor, the Krasnoyarsktransstroy trust, was entrusted with laying the underground rails from Industrial'naya Station to the plant site. Start-up was scheduled for 1982.

"But figuratively speaking, we needed this railroad yesterday," says A. Cherkashin, director of the enterprise under construction. "Judge for yourselves: we are currently faced with delivering more than 26,000 tons of metal and about 100,000 cubic meters of concrete to the construction site. Freight must now be reloaded at Korkino Station and brought here by motor transport. Can you imagine the losses of time and effort?"

It is for good reason that it was decided to accelerate construction of the railroad so as to open it to traffic by 20 April of this year. But it is now clear that the railroad will not be available by that date, given the current rate of construction.

At first glance, the third general contractor, the Ministry of Power and Electrification, has been working at a super-shockwork pace, on the other hand. The plan for the year was met by 614 percent! But what does that mean. The Krasnoyarskenergopromstroy trust is to have put a most important facility, the peak-hours boiler plant, into operation in 1981. Without it, start-up of the first capacities will be impossible. However, the ministry released only 50,000 rubles for installing it this past year. Of course, it is easy for the builders to overfulfill such a plan. Now, they are faced with utilizing four million rubles. Where the boiler plant will be, a couple of girders are sticking up, and that's all....

Were the lessons of last year for naught? Let's go out to the plant construction site.

There is a blizzard of noise throughout the huge structure, a roaring of oversized equipment. At the UPTK construction base we meet the young-Komsomol brigade of Fedor Val'kov, from the Krasnoyarsksekavatortyazhstroy's No 89 construction school. As one of the combine's best brigades of carpenters and concrete workers, it met its own obligations ahead of schedule last year. But today things are not going too well for it. There are interruptions in the supply of concrete every day. The reason is simple: the combine has no concrete facilities of its own.

And many brigades have similar misfortunes. It is no wonder that instead of the planned acceleration in January, a lag of more than two million rubles was permitted. The volume plan for the construction site as a whole was met by only 60.6 percent. The Glavkrasnoyarskstroy coped with the January industrial construction assignment by only 62 percent and the housing construction assignment by only 65 percent.

That is the situation which has evolved today in construction of this most important national economic project. We won't pretend that no one is alarmed about it. There was a change of leadership at the combine early this year. Combine subdivisions have been reinforced by new personnel. In the first quarter, another four dormitories are to be put into operation for young people arriving on Komsomol travel authorizations. We will begin specializing the combine's construction administrations by flow-line, as was outlined in the planning resolutions....

But as a whole, the construction site is yet to find the proper attention, and foremost on the part of the general-contractor ministries.

Several days ago a joint meeting of the coordinating council for cooperation and the kray construction staff for the Krasnoyarsk Heavy Excavators Plant was held in Krasnoyarsk. Taking part in the meeting were CPSU Central Committee, USSR Council of Ministers and branch trade-union central committee officials and leaders of ministries, construction-installation trusts and planning institutes. It was noted at the meeting that although quite a bit was done this past year to prepare the site and shape the new combine by the Krasnoyarsk-eksavatortyazstroy, things are on the whole going unsatisfactorily at the construction site. A resolution was adopted to have the ministries and departments help the construction project. In particular, more than 300 pieces of heavy motor transport equipment and a significant amount of other equipment was allocated. The Yuzhstal'konstruktziya trust, which recommended itself well at the Atommash site, will be enlisted in the construction.

#### Kazakh Organizational Problems

Moscow STROITEL'NAYA GAZETA in Russian 16 Mar 80 p 2

[Article by N. Kondrat'yev, chief of the Alma-Ata Comprehensive Department of the All-Union Scientific Research and Planning Institute of Labor and Construction, attached to the USSR Gosstroy, and P. Novikov, sector chief and candidate of economic sciences: "Magic of the Second Envelope"]

[Text] The following parable is popular among management workers. Two managers of the same trust, one just relieved of his duties and the manager-designate, meet.

"Here are three envelopes," says the one who has been dismissed. "When things go badly, open the first. When things are very bad, open the second. When things are terrible, open the third...."

The manager-designate opened the first envelope as soon as he had familiarized himself in detail with the activities of his predecessor. "Blame all misfortunes on me," said the sheet of white memo paper inside.

Which the new manager did. He blamed his predecessor for all the trust's misfortunes until he at last understood that it wasn't helping. Then he opened the second envelope and read: "Begin reorganizing." The magic of innovation is always great. Any reorganization, no matter how muddle-headed, symbolizes tempestuous managerial activity. And so the manager-designate zealously proceeded to follow the advice. The trust feverishly rearranged itself for three years. But then it became clear that that wasn't helping either, so he had to open the third and last envelope. The next sheet of paper said: "Prepare three envelopes."

We recall this melancholy parable for a reason. For the Almatastroy collective, 1980 began with unrest. A production reorganization was begun here: instead of the one large construction subdivision the trust had been, it was decided to create five other subdivisions specialized by type of work or project. The republic Ministry of Construction of Heavy Industry Enterprises concluded that narrow specialization would facilitate improving the construction management system and, as a consequence, would enable us to accelerate work tempos and improve quality. A logical assumption, it would seem....

But three years ago, Atma-Ata construction workers were worried about an entirely different task. At that time, it was decided to create a single organization based on three trusts, two construction mechanization administrations and a wood-processing combine. It was thought at that time that concentrating forces and means into a single organization would help improve the management system and would permit acceleration of work tempos and improvement in quality. So a trust arose, the Almatastroy, the same trust that is now being reorganized.

Improving the management system is a complex problem and is of particular importance today. The amounts of capital investment are growing each year. The network of construction organizations is being developed, the scale of new complexes being built is increasing, and ties among production participants are multiplying. As a result, the system of branch leadership is becoming more complicated.

The CPSU Central Committee and USSR Council of Ministers decree on improving the economic mechanism anticipated the change-over of construction management to a two- or three-link system in 1979-1981. In this regard, the primary management link must be the construction-installation association or trust.

Simultaneously with the reduction in intermediate administrative steps, it is proposed that construction-installation organizations be consolidated, that the number of such organizations be reduced. For Kazakhstan, this is of particular importance. The republic now has upwards of 300 primary contractor organizations with annual work volumes of less than a million rubles each and with 70-100 workers each. Is this advantageous for the state?

Research in recent years and the accumulated experience confirm that the optimum annual volume of construction-installation work for trusts must be 30-40 million rubles, and 4-7 million rubles for construction-installation administrations (SMU's). If these figures are not adhered to, there are enormous difficulties in planning, coordination and material-technical supply. The average annual load on republic trusts is 17-18 million rubles today.

There is also a direct correlation between labor productivity indicators and amount of construction-installation work. Thus, last year it turned out to be two-fold lower in small SMU's than in those in which the annual work volume exceeded five million rubles.

Given the conditions in Kazakhstan, we naturally cannot create only large organizations. They can turn out to be inefficient in remote, sparsely-populated regions. And even where construction is concentrated, there are often numerous small contractor organizations with identical specializations. That is the picture one sees, in particular, in Ekibastuz. Here, in addition to two large subdivisions of the republic Ministry of Heavy Industry Enterprise Construction and the USSR Ministry of Power and Electrification, there are about 20 different administrations and sectors of other ministries and departments. Each such organization has its own pygmy base which is incapable of setting up the large-scale production of needed materials. As a result, everything in Ekibastuz must be brought in from various and sometimes very distant regions of the country.

We could cite instances in which numerous construction organizations which are not only of the same type, but sometimes subordinate to the same department, are concentrated even in small settlements. Thus, there are two PMK's [mobile mechanized columns] of the Almaataoblyazhstroy trust operating in Pokrovka village, Alma-Atinskaya Oblast. One has 274 workers and the other 42. In the rayon center of Chilik, in the same oblast, Almaatasel'stroy Trust No 7 has two mechanized columns, and there are two PMK's of the Ural'-sksel'stroy in Dzhanybek village, Ural'skaya Oblast. One has three brigades, the other seven.

It is possible to reduce the number of construction organizations and simultaneously increase work volumes only by paying the most careful attention to each management link -- brigade, sector, SMU, and so on. Each has its own features, its own reserves for improving efficiency and quality. We must reveal the specifics of each production management link and take local conditions and features into account. Without this, we cannot count on success, as has been proven by the sad experience of past reorganizations in the republic Ministry of Heavy Industry Enterprise Construction.

In 1977, this ministry consolidated a number of construction trusts. Enterprises of the construction industry, motor transport and means of mechanization were made subordinate to them. Prior to the consolidation, there were 54 trusts in the system, with average annual contractor work volumes of 26 million rubles each. Now, there are 42, with average annual programs of 33.5 million rubles each. And eight trusts had plans of 50-75 million rubles.

A decisive step would appear to have been taken towards reaching the goal set. But not so. Qualitative improvement in the management system and methods did not occur along with the consolidation of the trusts. The quantitative and qualitative composition of the brigades, sectors and administrations did not change when they merged into the new structures and, finally, the functions of management at all levels did not change.

There was a mechanical merging, with these results. For the ministry as a whole, following consolidation output per person employed in construction and installation operations and in subsidiary production dropped 2.2 percent.

Construction-installation work volume decreased by 27 million rubles in 1977 as compared to the period prior to reorganization, and in 1978 -- by 16 million rubles.

Retreat has already been sounded in Alma-Ata. They have announced an attack...to the rear. They have begun dismantling the consolidated Alma-Ata-stroy trust. But isn't the present reorganization also doomed to a similar fate?

Of course, it is easiest to explain what has happened by the inertia of certain economic leaders, by the habit of adhering to old forms and methods of management. Although that is so, the main reason lies elsewhere. Engineers and economists and branch leaders were not armed with scientifically substantiated methodology for setting up the construction management system at all levels, from brigade to association. And the problem can't be solved by spirited cavalry swoops, by shouting "Charge!".

And science, too, has not risen to the occasion. The charges here should apparently be leveled foremost at scientists of the Kazakh SSR Academy of Sciences' Institute of Economics, who did not arm economic leaders with appropriate developments. And it is precisely in the area of the organizational forms of construction management that many unsolved theoretical and methodological problems have now accumulated. In particular, the management structure of the basic link of the system, the production construction-installation association, has thus far remained a blemish. The managerially optimum number of production units to comprise an association, their capacity, limits of economic independence, level of centralization of management functions and much more has not been determined. All these questions demand detailed, comprehensive study.

And if this is not done now, will not certain proponents of hasty reorganizations have to open the third envelope?

#### Delays Mean Expense

Moscow SOTSIALISTICHESKAYA INDUSTRIYA in Russian 20 Feb 80 p 2

[Article by V. Zayernyuk, chief of the planning department of the Belgorodskaya Oblast office of the USSR Stroybank: "Obsolete Plans Written Off As Useless"]

[Text] According to USSR Stroybank Belgorodskaya Oblast Office data, estimate planning documentation for 1.1 billion rubles has amassed for 333 construction projects in planning institutions and among clients in the oblast. Nearly seven years would be required to implement these plans, 10 years in the case of ferrous metallurgy projects. Expenditures on discarded plans were 1,876,000 rubles. This is equivalent to having our largest planner, the Tsentrorgiprora, work for a year and produce nothing.

How did this happen? It has been estimated that approximately 10 percent of the blame for failures to meet capital construction plans in net form is accounted for by planners. For example, in just the 15 construction projects of the USSR Ministry of Ferrous Metallurgy in our oblast, documentation for construction costing 353 million rubles was discarded. Direct expenditures on this worthless planning approximated a million and a half rubles (half of which was wages and bonuses to planners), and the first reason for that was poor planning quality.

We could not bring ourselves to accuse planners, engineers with sound experience, who would seem to understand their jobs, of not knowing the four arithmetical operations, but the facts are, as they say, obvious: elementary blunders abound in the documentation they prepare. Thus, construction-installation work omissions, price errors and simple arithmetic flaws of almost three million rubles were discovered at construction projects checked in the Stoylenskiy Ore Enrichment Combine. That is, almost a tenth of the estimated cost of the installation could not be actualized following "finished" plans. Indexed blueprints have become a real calamity (this abstruse appellation most often bashfully cloaks so-called refined blueprints, or more simply, correction of a planning defect). The "Mekhanobrchermet" institute in Krivoy Rog (director G. Suslikov) is currently reworking for the Stoylenskiy Ore Enrichment Combine blueprints for the department of filtration, the clarifier, the concentrate loading hopper, drive stations, reloading subassemblies. This replanning will require an additional 120 thousand rubles.

Each blueprint and each calculation is done by a specific person. Consequently, the question of documentation quality and its prompt use is foremost a question of discipline, of conscientiousness, of the responsibility of institute leaders.

But there is also another aspect, organization. Whoever has been in the planning offices knows that people are working by the sweat of their brow, always complaining about being tremendously overloaded, about the severe lack of time. If it becomes necessary to include something else in their plan, it means endless trouble! Given such a work load, how do they manage to work on the archives? Here, we are right at the source of planning problems.

At first glance, the compilation of estimate-planning work programs is being carried out efficiently. Take the above-mentioned "Tsentrorgiproruda" institute. Planning here has been set up appreciably better. Over the last two years, not one of the projects for which planning was begun has been eliminated from the plan, which had happened often before. That is good. But can the program be called stable? No. Twice a year, it is adjusted, and for by no means petty reasons. Why? First, because there is no long-range planning for the five-year plan, with a break-down by year. True, the situation has now changed dramatically: the well-known July (1979) CPSU Central Committee and USSR Council of Ministers decree provides a reliable start in life for principles of long-range planning and stability. Good changes will doubtless be quickly forthcoming.

However, along with bringing order to planning, we must also think about improving work at individual stages of preparing documentation for builders, including at the so-called preplanning stage. The attention paid it now is obviously inadequate.

Technical-economic substantiation (TEO) for the passenger transport enterprises of Oskol'sko-Qubkinskiy industrial region was done back in 1976, but was only reviewed and approved by the client (USSR Ministry of Ferrous Metallurgy) on 22 December of last year. The TEO for expanding the Belgorod Vehicle Repair Plant for large ore dump trucks has been studied for four years now. Substantiation for the fluxed pellets factory of the Lebedinskiy Ore Enrichment Combine and the center for readying rail cars for loading pellets has been "reviewed" since March 1979....

And what does diminishing the role of TEO lead to? Just one example. In 1961, planning work was begun on the Pogrometskiy mine. At the same time, only the Lebedinskiy deposit was known in the Kursk Magnetic Anomaly basin: other reserves had not yet been confirmed. It was proposed that the ore be open-pit mined, although large domestic equipment for working it in this way was not available and possibilities for purchasing such equipment were also unclear. But the planners went full steam ahead. In the meantime, other deposits were found, and documentation for construction of the Pogrometskiy mine was shelved. It did not even get into the region's general development plan. Now, of course, the plan is hopelessly obsolete and must be written off (incidentally, cost of construction was set at 300 million rubles). Those specifically to blame are lost in the mists of time, and there is no one to ask about the time and effort wasted.

The list of delays is so long that we are entitled to evaluate the facts as they stack up: technical-economic substantiations have quite simply been underestimated. There are gross failures to conform to the alphabet of planning and construction -- the TEO must precede planning itself, not to mention construction. The TEO's are sometimes either not worked out at all or are done in slapdash fashion (in a manner whose logic is not apparent). That means there is no thorough development of enterprise economic indicators, basic questions of production technology or construction resolutions. A great deal of uncoordination and work redone ensues. Here is a good example. The TEO for expanding and renovating the Lebedinskiy Ore Enrichment Combine (second construction line) was developed by the "Tsentrorgiprora" institute in 1975 in just two months. After that, on instructions from the USSR Ministry of Ferrous Metallurgy, the institute began working out the technical plan. It was released to the client in October 1976. However, since that time the initial parameter, enterprise capacity, has been changed three times, which is one reason why the construction site is a scene of feverish activity today.

One would think that a rather precise procedure for documentation to pass through the stages of review, concurrence and expert appraisal had been instituted, but it is not followed quite often. Why? The role of time normatives has diminished. They exist in theory, but in practice no one is governed by them.

When a norm ceases to be authoritative, the need appears for additional resolutions which, alas, by no means always improve things. Thus, as of 1 January 1979, a prohibition has been placed on overfulfilling planning and surveying work plans. It was thought that this would automatically result in planning efforts and funds being used only in obviously appropriate instances. What actually followed was different. Planning is generally a long process and the lack of started projects greatly complicates it. It turns out that, in an effort to bring order to the situation, an intelligent boundary was crossed and planners now do not have even a slight opportunity for maneuvering, for initiative.

If a year and a half or a two-year documentation reserve normative had been established, let's say, the feasibility and usefulness of planning would have been greatly increased. Such a normative would ensure that both planning and construction would be uninterrupted. We also need to review the crediting of normative reserves.

Today, it must be said, there are not all that many proponents of actually reducing worthless planning, not just talking about reducing it. This example shows how the clients behave. The capital construction administration of the Belgorodskaya Oblast ispolkom, having stockpiled documentation for four years ahead, received prior to the start of 1980 documentation from the "Belgorodgashdanproyekt" institute for another 15 construction projects...only four of which were included in the plan. Neither are the authors of unimplemented plans interested in reducing their numbers, strange as that seems. At the least, not one of the institutes monitored by us has expressed voluntarily a desire to curtail work on planning unfeasible projects.

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## CONSTRUCTION

### DETAILS OF FUTURE CONSTRUCTION PROGRESS IN UKRAINE UNVEILED

#### Yosipenko Report

Kiev PRAVDA UKRAINY in Russian 26 Mar 80 p 4

(Report by P. E. Yosipenko, Deputy Chairman of the Ukrainian SSR Council of Ministers: "Concerning the Status of and Measures for Further Improving the Construction of Housing Units and Structures Intended for Municipal-Everyday Services and Social-Cultural Use in the Republic")

[Text] Respected comrade deputies!

The Soviet people under the leadership of the Communist Party and its Central Committee started by Lenin is selflessly working to bring the historical decisions of the 25th CPSU Congress and the November (1979) Plenum of the CPSU Central Committee to fruition, and to prepare for a fitting greeting for the 110th anniversary of the birth of Vladimir Il'ich Lenin. All Soviet people have interpreted the speech by General Secretary of the CPSU Central Committee and Chairman of the USSR Supreme Soviet comrade L. I. Brezhnev at a meeting with voters of the Bauman district of Moscow as a battle plan for action.

"The peaceful life of the people, their creative work, their prosperity and spiritual growth," said comrade L. I. Brezhnev, "this is what communists are living and fighting for." The elections for the supreme soviets of the union republics and the local soviets once again have convincingly demonstrated the powerful unity and solidarity of our people with the Communist Party, their steadfast loyalty to the ideals of Marxism-Leninism and unanimous support of the domestic and foreign policy of the CPSU and Soviet state. Our people warmly approve of the multifaceted fruitful activity of the CPSU Central Committee and its Politburo, which is headed by today's prominent political figure and statesman comrade L. I. Brezhnev, for further developing the socialist economy and preserving and strengthening peace throughout the whole world.

While achieving a more complete utilization of the advantages of the socialist economic system, the party is steadfastly proceeding on a course to solve the principal task--to improve the well being of the people. Construction of housing units, schools, kindergartens, cultural and educational institutions, and structures intended for municipal and everyday services is proceeding on a large scale.

The problem of assigning every urban and rural family in the republic with a comfortable apartment or an individual home is being solved in a consistent manner. Thus, in fact, the right of each citizen to housing, which was first secured in the USSR Constitution, is being realized.

Since the beginning of the five-year plan, 9.7 billion rubles have been spent on housing construction in the Ukrainian SSR, two-thirds of which are comprised of state capital investments. Housing units with a total area of about 74 million square meters have been built. This has made it possible to improve the living conditions of almost 6.5 million people and to increase the material well being of urban dwellers to 13.8 square meters of total living space per inhabitant and to 16.7 square meters for people in rural areas.

The goal for four years of the five-year plan for putting housing units into use by means of state capital investments was fulfilled by 104 percent. Good results were achieved by Dnepropetrovskaya, L'vovskaya, Rovenskaya, Sumskaya, Khersonskaya, Chernigovskaya, Volynskaya, and Zhitomirskaya oblasts.

In addition to this the state of affairs for completing the housing construction plan cannot be considered satisfactory. Construction ministries did not meet the goals for the volume of construction and installation work for housing structures during the current five-year plan. The housing construction plans, which are being carried out by means of state capital investments and cooperative resources, are not being fulfilled for the Ministry of Land Reclamation and Water Resources and the Ministry of Procurement in Kirovogradskaya, Nikolayevskaya and Khmel'nitskaya oblasts.

Ministries and departments that are clients and local soviets of people's deputies should give more attention to such an important problem as the construction of housing for small families. Beginning with next year their relative proportion should increase significantly. It is necessary for ispolkoms of local soviets to strengthen their control over the apportionment of resources by enterprises and organizations for these purposes.

Construction of buildings for education, health services, cultural and municipal and everyday services, which are necessary for

satisfying the cultural and day-to-day needs of the population, is proceeding in the republic on a large scale. Since the beginning of the five-year plan general education schools that can accommodate 621,000 pupils and kindergartens and nurseries that can accommodate 328,000 children have been built since the beginning of the five-year plan by means of capital investments, which is more than was specified by the yearly plans. The plan for constructing these structures through kolkhoz resources was also overfulfilled. Schools which can accommodate 174,000 and preschool institutions which can accommodate 71,000 were put into service. The plan for putting schools and preschool institutions into use was overfulfilled by a majority of oblasts.

Strengthening the ties between local soviets and construction contract organizations and tightening control over the pace of construction at the sites aided in successfully fulfilling the planned tasks.

A large amount of funds are also being directed toward the development of the professional and technical educational system; however, they are still not being assimilated satisfactorily. The Ukrainian SSR Ministry of Agricultural Construction is doing a poor job of building these structures. The Ministry of Construction of Heavy Industries and the Ministry of Industrial Construction have also permitted delays.

Every year allocations increase to expand the medical institution system which serves to guarantee that the constitutional right of Soviet citizens for health care is realized. During the past 4 years hospitals with 47,000 beds and polyclinics that handle 79,000 visits per shift have been built and put into service.

At the same time, funds which are allocated for health care structures are systematically not being assimilated in a number of oblasts, most of all in Khersonskaya and Chernovitskaya. Construction time periods for large hospitals with multiple services in Uzhgorod and Chernovtsy are being disrupted. The possibilities which are derived from communist Saturday workers are not being utilized fully everywhere and directed towards the development of health care.

During the current five-year plan clubs and houses of culture which can accommodate 235,000, 72 stadiums, 34 swimming pools and more than 5,000 other sports structures are beginning operations. In addition to this, attention was given in the report to the necessity of accelerating the construction of a number of cultural structures, in particular the theaters in Ivano-Frankovsk, Khar'kov, Khmel'nitskiy, and Uzhgorod.

Citing figures which characterize disruptions in the capacities of municipal and everyday services, the speaker subjected to criticism a number of ministries, departments, and oblast and city soviets which are not engaged a great deal in such types of construction.

Mentioned among the principal reasons that the goals were not fulfilled for civil and housing construction were that a number of construction sites were not provided with design and estimate documentation, financing, material and technological resources, and workers on time. It is necessary to persistently increase the level of organization in construction, to introduce the knowledge of the foremost people in the field, to better utilize technology, and to eliminate losses in working time.

These needs are especially urgent during the concluding year of the five-year plan, when the volume construction for housing and structures intended for municipal and everyday services and social and cultural use is growing. By means of all sources of financing it is envisaged that housing units with a total area of 19 million square meters will be built. This will make it possible to improve the living conditions of another 1.7 million people. It is expected that new water and sewerage, heating and gas systems will be put into service, in particular, water systems in the cities of Kiev, Zaporozh'e, L'vov, Donetsk, Yalta, Nikolayev, and waste-water treatment plants in Khar'kov, Kerc', Feodosiya, and Dneprodzerzhinsk. It is planned that the school and kindergarten systems, hospitals, cultural institutions, everyday service enterprises and other structures intended for social use will be expanded.

In order to improve the state of affairs in construction in accordance with the requirements of the November (1979) Plenum of the CPSU Central Committee and the December (1979) Plenum of the Ukrainian Communist Party Central Committee, it is necessary to direct the efforts of contractors, clients, designers, and all participants in construction toward an improvement in organizational work for meeting the plan goals. The center of attention should be problems relating to strengthening and further improving the construction industry's production base, introducing advanced methods of organizing production and labor on a broad scale, providing construction sites with material, technological and labor resources on time, perfecting designing, improving construction in population centers, and improving the quality of construction.

Having dwelled on the problems of developing production and technological bases and expanding industrial methods of construction, P. E. Yesipenko pointed to the increase in the relative proportion of completely prefabricated housing construction. At present it amounts to 60 percent of the total volume of state and municipal housing construction. The successful work of the Belotserkov housing construction combine was particularly noted, whose collective was awarded the temporary Red Banner of the CPSU Central Committee, the USSR Soviet of Ministers, the VTeSPS [All-Union Central Council of Trade Unions], and the VLKSM [Komsomol] Central Committee for the fourth year in a row.

Along with this there are serious deficiencies in the utilization of the production base. Last year the capacities of large panel housing construction enterprises were insufficiently used. Certain obispolkoms do not ensure that housing construction combines have a full workload and do not give them the needed assistance in recruiting workers. The transfer of such enterprises to the production of housing units of new designs is being carried out slowly.

The capacities of a number of enterprises that produce construction materials are not being fully utilized. Construction ministries and the Main Kiev Urban Construction Administration are tolerating considerable deficiencies in developing their own production base and in building construction materials enterprises.

Regarding the decisions of the July (1978) Plenum of the CPSU Central Committee, development of a production base for constructing housing units in villages takes on particular significance. The Ukrainian SSR Ministry of Agricultural Construction and the Ukrainian Interkolkhoz Construction Administration must solve this problem in collaboration with the ispolkoms of local soviets. By the end of the 11th Five-Year Plan, the volume of construction for individual housing units, which is done by the contract method, should increase to a million square meters.

Improving the effectiveness of capital investments and fulfilling the housing and civil construction plans depends on an improvement in construction organization and planning. In this regard it is very important to ensure that the measures which were specified by the CPSU Central Committee and USSR Soviet of Ministers decrees concerning an improvement in the economic mechanism are carried out completely and totally.

Introduction on a broad scale of the uninterrupted planning system and mass line construction production—the so-called "Orlov uninterrupted method"—have special significance. Concentration of capital investments in the hands of a single client, the presence of a single general designer and contractor as well as the organization of work according to a two-year uninterrupted plan is the basis of it. Construction is being carried on in 33 cities of the republic according to such a system.

It is necessary for the ispolkoms of oblast and city soviets of people's deputies to continue work in this direction, after having given attention to working out two-year plans and design documentation which are of quality and completed on time and to engineering preparations for construction.

The Ukrainian SSR Gosplan, the republic Gosstroy design organizations and construction ministries should consider the introduction of the

Orlov method of organizing housing and civil construction as an important national economy goal. Along with this it should also be taken into consideration that it creates a reliable basis for introducing the brigade contract method which by right is recognized as one of the great potentials in construction and is being applied more extensively all the time.

Last year 12,000 contract brigades were working in the republic. They completed 37 percent of the total volume of contract construction and installation work, including 63 percent in housing construction. The duration of construction for housing units was reduced by 3.6 percent in comparison with the standards, the goal for labor productivity was exceeded by 4.8 percent and the cost of work was reduced by 1 percent. These indices were even higher for many collectives.

The brigade contract method is effective in conjunction with engineering preparations for production based on the experience of the "Vinnitspromstroy" combine where planning, providing complete production and technological items and accounting are organized directly for a consolidated crew.

It should be noted that this positive experience has still not found broad application. Deficiencies in engineering preparations for production and in providing crews with materials and technology lowers the efficiency of their work. It is necessary for the ministries and departments to eliminate the reasons that are restraining the introduction of the brigade contract method on a broad scale and to ensure that it is spread everywhere.

The Ukrainian SSR Gosnab, construction ministries and departments are obliged to take measures to improve methods of providing construction sites with materials and technology, to perfect the work of organizations that provide the necessary articles and to accomplish the transition to completely supplying construction sites through territorial administrations.

As before, the problem of providing construction organizations with personnel remains pressing. Keeping them and improving working and everyday conditions have not been given sufficient attention everywhere. Losses in work time are permitted at construction sites due to the unsatisfactory organization of production work, interruptions in supplying materials and technology and the poor introduction of means of mechanization. Elimination of these deficiencies should be combined with an improvement in training for construction personnel in professional and technical institutions.

It was emphasized in the report that socialist competition, as one of the main trends in organizational and mass political work, plays a large role in realizing the program for housing and civil construction.

Many republic construction collectives are fittingly greeting the 110th anniversary of the birth of V. I. Lenin. More than a thousand crews have been working on 1981 goals since 1 January and the same number have pledged to meet the goals of the five-year plan by Lenin's anniversary.

"The experience of our foremost people," V. V. Shcherbitskiy, member of the CPSU Central Committee Politburo and First Secretary of the Ukrainian Communist Party Central Committee, emphasized at the December (1979) Plenum of the Ukrainian Communist Party Central Committee, "convincingly shows what great possibilities are contained in the creative initiative of the people. And the broad use of the knowledge of innovators is the path along which we must travel in obtaining great efficiency and the best final results for all areas of work."

The valuable initiative of favoring the foremost collectives over the ones that lag behind is finding more and more support at republic construction sites. Crews at the "Khersonpromstroy" combine, which is managed by Deputy of the USSR Supreme Soviet and Hero of Socialist Labor N. G. Dashko and honored Ukrainian SSR construction worker and bearer of the Order of the Red Banner of Labor V. M. Mayatskii, have started this work. Competing among themselves they undertook to pull the lagging collectives out of their rut. The competition among construction crews in the Krymskaya oblast to achieve the highest output in real indices for finish work and between collectives in the L'vovskaya oblast to improve the quality of civil and housing construction merit attention.

The first and foremost task of Soviet economic agencies and trade union organizations is to improve the effectiveness of competition, to involve all collectives in it, to create the necessary conditions for fulfilling obligations, to ensure publicity of the results, and to more effectively utilize moral and material stimuli to achieve high labor results.

Creation of the best conditions for the work and leisure of laborers is inseparably linked with the reorganization of population centers, the creation of a rational organization for housing rayons, social, cultural and everyday service institutions, and utility and transportation systems in them. With this goal general plans have been developed for all cities and city-type settlements and schemes for distributing civil and housing construction during the current five-year plan have been developed for 128 large cities.

There are many good examples of the complete construction of housing ensembles and microrayons in the republic. These are Bereznyaki and Vinogradar' in Kiev, Pobeda in Dnepropetrovsk, Serebriy in L'vov, and Rotok in Belya Tserkov'. However, serious disruptions can be found in realizing the general construction plans. Despite the

general plans, in a number of large cities the construction of industrial enterprises is not being fully expanded, and along with this the development of the urban economy and preservation of the surrounding environment is frequently not being considered.

Little attention is being given to the search for ways of improving the qualitative level of planning and constructing housing rayons. Construction of several rayons with perfect indices has not been accomplished in large cities up to the present day although the most advanced architectural, planning and urban development principles have been used in the designs for their construction.

Much work is being done to reconstruct villages. More than 85 percent of rural population centers and practically all villages in which central kolkhoz or sovkhoz farmsteads are located have been provided with a plan. The complexity of construction for the villages of Kodaki and Kolita in Kievskaya Oblast, Yelizavetovka in Donetskaya and Kamanka in Nikolayevskaya and Shlyakovaya in Vinnitskaya Oblast, which were awarded the USSR Council of Ministers Prize, were highly appraised. Many population centers were named winners of all-union review-competition as the best rural settlements in the country.

It was emphasized in the report that Gosplan, the Ukrainian SSR Gosstroy, ministries and departments must give more attention to improving the overall construction of cities and villages when forming the plan for economic and social growth for the 11th Five-Year Plan.

A further development of civil and housing construction and an improvement in its level of quality depends a great deal on an improvement in design and estimate work. During the current five-year plan the material and technological base of design and research organizations has been strengthened. Means of automating and mechanizing design and engineering and technological research are being applied ever more broadly. Computer centers have been formed in a number of institutes and work is going on to automate drafting and scheduling work. An overall system for controlling design quality is being introduced. In 1979, 18 percent of the total volume of documents that were released were of superior quality.

Design organizations are giving much attention to reducing the estimated cost of construction, which makes it possible to save 75 million rubles annually and also to economize more than 27,000 tons of rolled metal, 60,000 tons of cement and up to 65,000 cubic meters of lumber products. Improved types of designs are being applied in large-scale housing construction. They are characterized by improved apartment layouts and better operational qualities.

However, the designs for industrial housing units which are being used still do not fully correspond to the needs of modern construction in cities and of their architecture and their individuality. The republic Gosstroy and design organizations should concern themselves with introducing more advanced methods of design in civil and housing construction. This will ensure a further improvement in the quality of construction for population centers along with a reduction in the products list for industrial articles.

It is necessary for the Ukrainian SSR Gosstroy, ministries, departments, oblast and city ispolkoms of soviets of people's deputies, and directors of design institutes to perfect design and estimate work to improve the design quality of housing units and structures intended for municipal and everyday services and social and cultural use and to attain high architectural standards in them.

Much attention was given to the quality of construction in the report. The necessity of increasing the number of structures that are approved with an evaluation of "good" and "excellent" was emphasized. Meanwhile this index is significantly lower in Poltavskaya, Khar'kovskaya, Odesskaya, Volynskaya, and Nikolayevskaya oblasts. The practice of putting about half of the area of all housing units into use during the last quarter adversely affects the quality of work.

It is the duty of construction ministries and departments and the republic Ministry of the Construction Materials Industry to ensure that technological discipline, construction standards and specifications, the delivery to the construction site of high quality materials and articles that are of high factory preparedness, and an improvement in the finish work for buildings is strictly observed. Much remains to be done by the Ukrainian SSR Gosstroy, especially for introducing a construction quality control system during the current year.

In conclusion the speaker said:

The decision which was approved by the party and the government relative to the CPSU Central Committee and USSR Soviet of Ministers Decree "Concerning an Improvement in Planning and Increasing the Influence of the Economic Mechanism to Improve Production Efficiency and the Quality of Work" specifies a further increase in the role of soviets of people's deputies on questions of planning housing, municipal, cultural and everyday service construction as well as taking control over the fulfillment of these plans. The soviets, especially oblast soviets, should come forward, as comrade Leonid Il'ich Brezhnev emphasized in his pre-election speech, "as the main force in the overall economic and social development in their territory."

The more completely that the deputies control the pace of construction for housing units, schools, kindergartens, children's preschool institutions, hospitals, polyclinics, and structures intended for cultural use and municipal and everyday services, and the more expressively that these problems are discussed at the sessions of the local soviets of people's deputies, the more quickly the social and economic goals for improving the well being of the Soviet people will be met.

A review of the question of the status of and measures for improving construction for housing and structures intended for municipal and everyday services and social and cultural use in the republic at the present session of the Ukrainian SSR Supreme Soviet will aid in successfully fulfilling the plan for 1980 and in creating conditions for even more efficient and qualitative work during the 11th Five-Year Plan.

#### Results Recapped

Kiev PRAVDA UKRAINY in Russian 5 Jan 80 p 1

[Interview with V. I. Anan'ev, deputy chairman of the Ukrainian SSR Gossplan: "Construction Sites in 1980"]

[Text] "The goals of the plan for 1980 are not simple. But they should be met...." These words, uttered by comrade L. I. Brezhnev at the November (1979) Plenum of the CPSU Central Committee, have been perceived by the Soviet people as a call to action. Workers in all sectors of the national economy in the republic have been striving since the very first days of the concluding year of the 10th Five-Year Plan to set the pace necessary to ensure that plans and obligations will be met.

V. I. Anan'ev, deputy chairman of the Ukrainian SSR Gossplan, tells a RATAU [Ukrainian Telegraph Agency] correspondent what Ukrainian construction workers are doing about the tasks which lie before them.

[Question] Four years of the 10th Five-Year Plan have gone by. During this period a new step has been taken in the development of the economy. With what results did construction workers enter 1980?

[Answer] Republic construction workers have made an important contribution toward implementing the decisions of the 25th CPSU Congress. In 1979 alone, more than 18 billion rubles of capital investments were assimilated and hundreds of structures were put into operation. Among them are the Zapadno-Donbasskaya mine, large-scale capacities at the

Severnyy mining enrichment combine, Stakhanov railway car building plants, Zhitomir automated machine tool plant, and the Lisichansk oil refinery. Due largely to a fast pace of work, complete liquid mineral fertilizers were derived at production associations--at the Rovno and Cherkassy "Azot" and the Sumy "Khimprom"--and new lighter axles for railroad cars at the Dneprovskiy metallurgical plant imeni F. E. Dzerzhinsky.

Construction was completed for complexes for the production of ammonia at the Odessa preport plant, the Gorlovka "Stirol" production association and the Dneprodzerzhinsk "Azot" production association, and for the production of polyethylene at the Severodonetsk "Azot" production association. Capacities for manufacturing consumer goods were put into operation at the Nikopol' spinning factory, the Odessa knitted garments association imeni Krupskaya, the Pal'mir sugar refinery, the Cherkassy meat packing plant, and the Feodosiya city dairy.

Work was performed on a large scale to further strengthen and develop the material and technological base of agriculture. More than 18 million square meters of total area in housing units were put into use, the school system, children's preschool institutions, hospitals, and structures intended for municipal and everyday services expanded.

[Question] What are the main problems that construction workers will solve during the concluding year of the five-year plan?

[Answer] In 1980, 18.5 billion rubles of capital investments are being allocated to the republic for the national economy. A fairly large portion of these allocations are intended for such important construction sites as heating and power complexes, for example, the Chernobyl', Rovno and Yuzhno-Ukrainsk AES, the Dnistrovsk complete hydroelectric station, the Chigirin GRES, and the Zuyevka GRES No 2. Preparatory work for construction will continue at the Krymskaya and Khmel'nitskaya AES. Capital investments are increasing for the coal industry.

As before, considerable funds are being allocated for the development of metallurgy, machine building, and the oil refining and chemical industries--sectors which determine technological progress--and also for the further development of agriculture and transportation. In particular, work will continue on a broad front at the Odessa preport plant, the Nikolayevsk alumina plant and a number of other structures.

Much water management construction is continuing in the republic. The Dunay-Dnistrovsk and the Kakhovka irrigation systems are being built, the second phase of the Severo-Krym canal is being prepared to be turned over for use as well as the Dnepr-Donbass canal. Preparatory work will also begin for construction of the Priazovskoye irrigation system.

Housing construction is continuing on a large scale. Apartments with a total area of 19 million square meters have to be put into use which will make it possible to improve the living conditions of 1.7 million people and, for the entire five years, for more than 8 million people.

The Olympic structures are a special problem. Guests and participants in the 1980 Olympics are already awaiting two new comfortable hotels--the "Prikarpat'ye" in Uzhgorod and the "Rus'" in Kiev. A large amount of work is being done at the central stadium in the Ukrainian capital. The Main Kiev Urban Construction Administration must complete reconstruction of the republic's main sporting complex and all other Olympic structures in the established period of time without slowing their pace.

[Question] During his speech at the November (1979) Plenum of the CPSU Central Committee comrade L. I. Brezhnev particularly emphasized the necessity of increasing the effectiveness of capital investments, of reducing the amount of newly started construction and of concentrating manpower and resources at starting structures. What is being done in the republic to realize these instructions?

[Answer] Unfortunately, the volume of incomPLETED construction in the republic still remains very large. The standards were especially exceeded by the Ukrainian SSR Ministry of Ferrous Metallurgy, the Ukrainian SSR Main Administration of the Petroleum Refining and Petrochemical Industry and the Ministry of Land Reclamation and Water Resources. As was noted at the December (1979) Plenum of the Ukrainian Communist Party Central Committee certain ministries, departments and obispolkomas are not providing the required amount of capital investments. During the past year the volume of apportioned funds for many carry-over construction projects was reduced in comparison with what was established in the title lists and a number of new construction projects were simultaneously begun. Such a practice leads to the dilution of manpower and resources, increases the cost of construction and lowers its quality.

In order to increase the effectiveness of capital investments the plan for the economic and social development for 1980 specifies a reduction in the number of construction projects that are intended for manufacturing by 20 percent for the republic and union republic ministries and departments, including newly begun construction projects by 30 percent, which makes it possible to reduce incomplete construction in the republic by 7 percent.

The republic Gosplan in collaboration with the Ukrainian republic offices of the USSR Stroybank [Construction Bank] and the USSR Gosbank, and Ukrainian SSR departments are carrying out a number of other supplementary measures. Thus, several of the newly begun construction

projects that are not provided with technical documentation and equipment on time will be excluded from the plan for the current year and the new starting sites that will begin initial operation will be divided more evenly among the quarters.

[Question] In accordance with party and government decrees concerning an improvement in the economic mechanism beginning with the 11th Five-Year Plan, a stable five-year plan for capital construction with tasks distributed among the years will be approved. A transition to planning labor productivity according to net production will be accomplished. How are preparations for this proceeding in the republic?

[Answer] It is specified that planning and evaluating the activities of construction organizations and ministries is to be done not according to volume, as before, but according to structures that begin initial operations and commodity production. The republic Ministry of Construction of Heavy Industry Enterprises and the Ministry of Installation and Special Construction Work are already operating under the new system of management according to the experimental procedures for the second year. And now we have the first results. Organizations of the Ministry of Construction of Heavy Industry Enterprises, for example, have turned over for use a significantly larger quantity of sites in 1979 than in 1978.

At the present time measures are being developed for preparing an estimate-standard base for the gradual transition during the 11th Five-Year Plan to planning labor productivity in all construction and installation organizations according to (standard) net production or another index which would more accurately reflect changes in labor expenditures, and funds for wages will be according to standards for a ruble of products.

Administrators of construction organizations should prepare to work under these conditions more energetically and thoroughly.

[Question] Not all of the potentials in capital construction have been put to use yet. What measures are being undertaken in order that the brigade contract method will be adopted more extensively and that industrialization of construction will be increased?

[Answer] It goes without saying that potentials exist in every construction organization. One of them is the brigade contract method. At the present time 36 percent of the total construction and installation work in the republic is being accomplished by this method. During the present year this index is expected to reach up to 40 percent and for the republic Ministry of Industrial Construction up to 60 percent. The experience of Vinnitsa construction workers merits extensive application which has as its basis planning, providing the necessary articles and accounting directly for a consolidated crew.

The further growth of industrialization for the sector is expected in 1980. Thus, prefabrication in construction for large-size articles and components will grow to 54 percent. The specific proportion of large panel housing construction in the total volume of housing construction will comprise 57 percent.

Today, during the preparatory period for the 26th CPSU Congress, republic construction workers are fully aware of the importance and difficulty of the tasks which lie before them. They will apply all their efforts to fittingly greet the 110th anniversary of the birth of V. I. Lenin and to successfully meet the plans and obligations of the concluding year of the five-year plan.

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## CONSTRUCTION

### CONSTRUCTION PROJECTS IN MOSCOW REVIEWED

UDC 641.338

#### Results Summarized

Moscow GORODSKOE KHOZYAYSTVO MOSEKVY in Russian No 2, Feb 80 pp 2-6

Article by Chairman of the Executive Committee of the Moscow City Soviet V. F. Promyslov: "An Intense Finish for the 10th Five-Year Plan!"

Text The start of 1980, the final year of the 10th Five-Year Plan, was marked by the general patriotic inspiration of the workers of the capital and all the residents of the city. The elections to the Supreme Soviets of the republics and the local soviets of people's deputies are approaching. Undoubtedly, the elections will be a vivid demonstration of the indissoluble unity of the block of communists and nonparty people, who are purposefully and consistently implementing the policy of the Communist Party, the will and interests of the people.

Muscovites, like all the Soviet people and all progressive mankind are preparing to solemnly mark the 110th anniversary of the birth of V. I. Lenin. More than 250,000 workers of all sectors of the national economy of the city have joined the patriotic movement for the fulfillment of personal plans by the memorable date. More than 40,000 leading workers have already fulfilled and exceeded the five-year assignments. The decree of the party Central Committee, "On the 110th Anniversary of the Birth of Vladimir Il'ich Lenin," gave new impetus to great labor and political activity. To complete the 10th Five-Year Plan in the shock work manner and to lay a good foundation for the successful start of the 11th Five-Year Plan--the efforts of the collectives of enterprises and organizations are focused on this.

The decisions of the November (1979) CPSU Central Committee Plenum are notable for adherence to Leninist principles, Leninist demandingness and irreconcilability toward shortcomings. Having noted the outstanding gains made by our people in all sectors of the building of communism, General Secretary of the CPSU Central Committee Comrade L. I. Brezhnev in his speech at the plenum critically appraised what has been achieved, indicated

the shortcomings and outlined the cardinal problems of the further development of the Soviet economy, the specific ways of substantially increasing production efficiency and work quality and of increasing the well-being of the people.

Muscovites greeted with ardent approval the results of the work of the November (1979) CPSU Central Committee Plenum and the Second Session, 10th Convocation, of the USSR Supreme Soviet, which discussed the State Plan of USSR Economic and Social Development and the State Budget for 1980. The theses and conclusions of the speech of Comrade L. I. Brezhnev at the plenum were the basis for the activity of all party, state and economic organs on the fulfillment of the 1980 plan and the implementation of the decisions of the 25th CPSU Congress on questions of the economic policy of the party.

In conformity with these decisions a plan of the comprehensive economic and social development of Moscow for 1980, which was adopted by the 12th Session, 16th Convocation, of the Moscow Soviet, was drawn up. The critical remarks and mandates of the voters and the proposals of ministries and departments on the development of Moscow associations, enterprises and construction projects were taken into account in the plan. The counterplans and socialist obligations adopted by labor collectives were reflected in it. But the most important thing is that the 1980 plan rests on the sound foundation of the preceding four years of the five-year plan.

Thus, the industrial production volume during 1976-1979 increased by 17 percent with a plan of 13.9 percent. The increase of the production volume has been ensured, which is very important, mainly by means of the more efficient use of the capacities of operating enterprises, their renovation and retooling and the placement of new, more productive equipment into operation. In four years of the five-year plan 2.5 billion rubles were spent for these purposes. As a result, for example, of the introduction of new equipment in industry of the city during 1976-1979 an economic impact in the amount of more than 650 million rubles was obtained and about 100,000 workers were conditionally released.

The social program of the five-year plan has been consistently implemented. The builders put into operation apartment houses with a total area of 17.7 million m<sup>2</sup>. This made it possible to improve the housing conditions of another 1.7 million people. It should be emphasized that the high rate of housing construction was accompanied by the constant improvement of the architectural, layout and operating qualities of the buildings. The amounts of construction according to new plans with the use of standardized items of the Uniform Catalog and with an increase of the number of stories of the new housing projects increased.

Along with housing construction an extensive set of operations on the preservation and the improvement of the technical condition of the existing available housing was carried out in the city. The expenditures on capital repair are increasing annually. During 1976-1979 they were 725 million rubles, which made it possible not only to offset the annual standard wear of housing, but also to reduce the accumulated above-standard wear.

The creation of unified dispatcher systems of the remote control of the operation of the engineering equipment of buildings was completed in housing services. The introduction of rayon dispatcher systems was begun. The mechanization of repair and cleaning work was actively carried out, the organisational forms of the management of housing services and repair work were improved.

Other important sectors also underwent further development. Much attention was devoted to measures aimed at the development of passenger ground transport. More than 140 km of trolleybus lines and 10 km of streetcar tracks were built and renovated, 60 new routes were opened. The production and repair base was consolidated and expanded. The transportation systems received in replacement of the retired vehicles and as an addition to the fleet about 6,000 vehicles.

The improvement of the operation of urban passenger transport is in many ways connected with the further increase of the amounts of subway construction. In late December of last year the Kalininskiy Radius with a length of 12.3 km was put into operation. With allowance made for the Rizhskiy Radius, which was put into operation in 1978, the length of the subway lines during the years of the 10th Five-Year Plan has been increased by 20.4 km.

During 1976-1979 the network of urban improved thoroughfares, which are equipped with engineering structures, was developed in conformity with the plan assignments. In all 4.7 million  $m^2$  of roads were put into operation. Such major highways as the Simonovskiy val were built, the Shchelkovskoye, Yaroslavskoye, Kashirskoye and Altuf'yevskoye highways were renovated. Transportation intersections, overpasses and tens of underpasses were put into operation.

The accelerated development of the system of centralized heat supply and the elimination of small uneconomical sources of heat were the main direction of the consolidation of the power engineering base of the city. During the past four years the increase of the thermal output of Moscow TETs's and the heating plants of the Moscow City Soviet Executive Committee was respectively 4,400 and 840 gigacalories/hr. At the same time nearly 300 km of steam and hot water pipes, which are equipped with pumping stations, control and measuring equipment and units for protecting underground pipelines against electrochemical corrosion, were built.

The stability of city water supply has increased. A major new source--the Vazuzskaya Hydraulic Engineering System--has been put into operation. As compared with 1975 the consumption of water for municipal and household needs per resident has increased by 18 percent. Pumping station have been built in Severnoye Tushino, Sviblovo and other rayons for the purpose of improving the hydraulic operating conditions of the water supply networks. The first section of the Novo-Zapadnyy Water Supply Station has been built. The practically complete halt of the discharge of untreated sewage into open watercourses has been ensured.

Much work on the landscaping of the grounds of apartment properties and the civic improvement of parks, squares and boulevards is being carried out in the city with the activity participation of social organizations and the population. The area of green plantings has been increased by 3,000 hectares, 200 lanes, streets and thoroughfares have been landscaped. More than 1 million trees and 6 million shrubs were grown and sold in order to fulfill the outlined plans.

The increase of the people's well-being and the improvement of the service of the population are directly connected with the supply of foodstuffs and industrial goods and with the development of the material and technical base of enterprises of trade and public dining. In four years 1,040 stores, cafes, restaurants and dining rooms, including 109 school and school-base dining rooms, were opened in Moscow. The retail commodity turnover increased by more than 18 percent and in 1979 was 17 billion rubles. The sale of the products of public dining enterprises increased by 12 percent.

At stores, industrial enterprises and institutions 1,248 divisions of advance orders for foodstuffs have been organized. In 1979 25 million orders were filled as against 13.4 million in 1975. In four years of the five-year plan 360 stores and divisions for the sale of convenience foods, culinary and confectionary items were equipped. The total number of order desks for culinary products reached 2,420.

During the 10th Five-Year Plan the volume of personal services of the population increased, their organization and quality were improved. In all 88 new types of services were introduced, their total number exceeds 500 types. For the purposes of consolidating the material and technical base of personal services six combined factories for the rush dry cleaning of clothes and the washing of laundry with self-service shops, a house of personal service, eight personal service combines and more than 600 household service enterprises on the first floors of apartment houses were opened.

City health care underwent further development. Hospitals with 7,240 beds and 52 polyclinics for 41,500 visits were put into operation, during 1976-1979 24 children's polyclinics for 9,900 visits, 3 maternity homes with 230 beds each and a considerable number of facilities for maternity advice and milk distribution centers were built. At the end of 1979 the number of children in preschool institutions came to 448,700 as against 391,900 in 1976.

The gradual development of the material and technical base of public education and culture and the increase of the standard of living of Muscovites are being ensured as a result of the implementation of the plans of the comprehensive economic and social development of the capital. The overall results of the development of the national economy of the city in four years of the five-year plan attest that the economic structure of Moscow and the plans of renovation are being carried out successfully.

At the same time, when analyzing the results of this period in light of the November (1979) CPSU Central Committee Plenum and the instructions which ensue from the speech of Comrade L. I. Brezhnev at the plenum, it is impossible not to note the shortcomings in the work on the development of the economic structure of the city. They are primarily the consequence of the poor organizing activity on the increase of production efficiency and work quality and on the tightening up of state planning and labor discipline.

The incomplete utilization of the production capacities, which have been created in literally all the sectors of the national economy of the city: from industry to services, first of all belongs to the fundamental shortcomings. They are the low output-capital ratio, the slow increase of labor productivity, the inadequate level of mechanization of technological processes, losses of working time and, finally, the lack of coordination in the activity of allied sectors.

In 1979 the plan assignments on placing into operation several cultural, personal and municipal projects of importance to the city were not fulfilled, which is making the conditions of consumer service difficult in the new regions of mass housing construction. The Main Administration of Capital Construction--the main client in the city--is still poorly influencing the comprehensive fulfillment of the outlined plans and the placement of projects fully into operation. The main administration is not displaying the proper demandingness toward planning and contracting organizations, thereby not ensuring the observance of contractual and financial discipline.

The Main Administration of Capital Construction and the Main Administration for Housing and Civil Construction in Moscow City have not achieved an improvement of the work on the preparation of construction starts in residential housing construction, which is the main reason for the erratic placement of projects into operation and their presentation for delivery with significant unfinished operations. The losses of working time are still great in the construction organizations of the Main Administration of Housing and Civil Construction of Moscow City. Hence labor productivity is increasing slowly.

The capital investments for the development of municipal services are not being fully utilized. The Main Administration for the Repair and Restoration of Housing and Public Buildings and the Main Administration of Housing of the Moscow City Soviet and the rayon soviet executive committees are not ensuring the fulfillment of the assignments on the renovation of base apartment houses. The capacities of repair and operating services are increasing slowly. There are frequent cases of the violation of the technology and standard duration of repair work.

Complaints of the population as before are being sent to the Passenger Transport Administration, which is not ensuring the necessary level of service of the population. The regularity of service is being disrupted, cases of the return from the lines and the failure to appear on the routes of buses and trolleybus are frequent. In the bus fleets a considerable number of the buses are idle due to the inadequate recruitment of drivers.

The Main Administration of Trade and the Main Administration of Public Dining are allowing cases of interruptions in the supply of the public with goods which are available in a sufficient amount at warehouses and bases. These main administrations have relaxed the monitoring of the observance of the set assortment of goods, as well as the work on the increase of the quality and standards of service at stores and public dining enterprises.

The achieved level of personal and municipal services still does not meet the demands of the population. Frequently orders are filled with a violation of the deadline and with a low quality. The workers of consumer services are both inattentive and rude to clients.

The question of further tightening up discipline was urgently raised at the November (1979) CPSU Central Committee Plenum. The tasks facing us, Comrade L. I. Brezhnev emphasized, require the further tightening up of discipline at all levels. Economic managers and public organizations should wage a determined campaign against laxity and should strive more actively for the tightening up of labor discipline, using more extensively for these purposes the force of public pressure.

We should also devote the most serious attention to the implementation of the decree of the CPSU Central Committee, "On the Improvement of the Work on the Maintenance of Law and Order and the Intensification of the Campaign Against Offenders." It is stated bluntly in it that when tallying the results of the socialist competition of labor collectives it is necessary to take into account the state of discipline and educational work. The pride of a Muscovite also presumes a great sense of responsibility, which obliges every resident of the capital to serve as an example of the observance of the established procedure and rules of behavior at home and at work, on the street and in public places.

The tasks set by the CPSU Central Committee Plenum require an increase of the level of all labor activity. It must be aimed toward the further development of the economy, science, culture and public education. It is necessary to focus attention on the utmost development of the activeness of the masses, the increase of good organization and discipline and the enhancement of the personal responsibility of personnel for the assigned job.

The plan of the comprehensive economic and social development of Moscow for 1980 is aimed at the accomplishment of the most important tasks, which ensue from the decree of the November (1979) CPSU Central Committee Plenum, the instructions contained in the speech of Comrade L. I. Brezhnev at the plenum, as well as the decree of the CPSU Central Committee and the USSR Council of Ministers, "On the Improvement of Planning and the Intensification of the Influence of the Economic Mechanism on the Increase of Production Efficiency and Work Quality."

The increase of the gross production volume for industry of the city is envisaged at the level of 3.1 percent of the 1979 results, which will make it possible to achieve the 20.5-percent increase of the production volume,

which was set by the five-year plan. However, with allowance made for the counterplans and socialist obligations of the labor collectives it is intended to achieve in 1980 a 3.8-percent increase of the industrial production volumes and a 21.4-percent increase for the five-year plan as a whole. The corresponding proposals by Moscow organizations have been made to USSR Gosplan.

For the industry of the Moscow City Soviet Executive Committee the production volume will increase by 1.7 percent. A reduction of the specific rates of consumption of raw materials, fuel and electric power is envisaged at enterprises, which will reduce the production cost of commodity production by 5.4 million rubles. On the whole it is planned to obtain a profit from industrial activity in the amount of 266 million rubles with a 1.3-percent increase as against the 1979 results.

The work on improving the planning of the production operations of the enterprises and organizations of the capital and enhancing the role of economic methods is being continued in 1980. The indicator of the standard net production is undergoing further introduction. The changeover of industry to the conditions of the planning and evaluation of operation according to this indicator is aimed at the more accurate measurement of labor productivity and the reduction of the materials-output ratio of production. All the industrial enterprises of the Moscow City Soviet Executive Committee have been converted to the planning and evaluation of activity according to the indicator of the standard net production.

The largest production subdivision of the Main Administration for Housing and Civil Construction in Moscow City--the Moscow State Association of Large-Panel House Building--is being converted to the planning, financing and evaluation of activity according to the commodity construction production and settlements for the finished project. This is especially important as the builders have in 1980 an extensive and stepped-up plan. It is planned to put into operation 4 million  $m^2$  of total area of housing alone.

The process of continuously improving the planning and layout decisions is taking place in housing construction. The number of stories of apartment houses is increasing. These circumstances, as well as the development of new regions of building are causing a gradual increase of the specific expenditures and the periods of construction of the buildings and require an increase of the construction under way. The state capital investments, which have been allocated in 1980 for housing construction, have also been increased as against the 1979 plan. This is another vivid display of the constant concern of the party and the government about the development of Moscow and the living conditions of Muscovites.

In his speech at the November (1979) CPSU Central Committee Plenum Comrade L. I. Brezhnev emphasized the need to reduce the number of newly begun construction projects and to do the utmost for start-up projects and the quickest possible placement of capacities into operation. In light of these instructions the Moscow City Soviet has elaborated additional measures on

increasing the efficiency of capital construction. The lists of projects being started have been reviewed. Their number as compared with the 1979 plan has been reduced by more than 20 percent. The concentration of resources and the forces of the builders on construction starts is being carried out. The amount of unfinished construction is being reduced on this basis. The dates of the placement of a number of capacities into operation are drawing near.

The construction of Olympic facilities is one of the most important sections of the construction program of this year. In spite of the fact that the remaining operations are primarily of a finishing nature, they are extremely labor-consuming and require great attention and efforts. It is planned to complete the installation of the technological equipment and devices and the artistic publicity design and to carry out a significant amount of start-up and adjustment work. The completion of the construction and repair of hotels and hostels, restaurants and cafes, the civic improvement and renovation of thoroughfares and streets, which are adjacent to the sports facilities, is planned.

In connection with the forthcoming Olympic Games the development and improvement of urban passenger transport are of great importance. This year its fleet will be updated and supplemented with 1,450 buses, 190 trolleybuses, 100 streetcars, 4,832 passenger taxicabs and 330 jitney taxis. The total capacity will increase by 89,000 seats. It is planned to complete the construction of the start-up complex of the bus fleet for 400 buses on Volokolamskiy Highway, of the trolleybus fleet for 250 trolleybuses on Elektro-Jitnyy Lane, as well as to build 27 km of trolleybus lines, 7 power substations and 27 outdoor stops for buses, which will serve the participants and guests of the 1980 Olympics.

The overall improvement of the operation of urban passenger transport requires the increase of the density of the system by means of its development in the regions of mass housing construction, the elimination of the transportation isolation of individual regions, the increase of the fleet of vehicles and the constant observances of the timetable. The task consists in reducing the unprofitability of the operation of ground passenger transport.

Every year in the life of our capital is another step in the solution of the problem of transforming Moscow into a model communist city. Here its civic improvement, landscaping and the state of road building and maintenance play an important role. In 1980 it is planned to put into operation a transportation intersection on the different levels of the Kashira-Rublevo thoroughfare with the Kiev direction of the Moscow Railroad, which will make it possible to provide a transportation link of the Olympic Village with the zone of the sports structures in Krylatskiy.

The construction of a bridge crossing over the Moscow River at Shchukino-Strogina and the next section of the intraurban beltway from Sokol'nicheskaya Street to Bakuninskaya Street is envisaged. Underground crossings will

be put into operation on Leningradskiy Prospekt, Sushchevskiy val Street, the Dmitrovskiy and Kashirskiy highways to ensure pedestrian traffic safety.

It is planned to plant more than 36,000 trees and 360,000 shrubs and to restore and plant 250 hectares of lawns. It is planned to perform work on landscaping at the newly allocated grounds of the Park imeni 50-letiya Sovetskoy vlasti, the parks on the Yauza River, the Fili-Kuntsevskiy and Kuskovskiy parks. Trees and shrubs will be planted on a number of boulevards: Gogolevskiy, Samarkandskiy, imeni Khimushin and others. In conformity with the plan nurseries and forest park managements should grow 250,000 trees and 1.8 million shrubs for the landscaping of the city.

Last year a considerable amount of work was performed on preparing the city for the winter. The repair of heat and power equipment was completed, new fuel stores were created. The electric capacity and thermal output during the years of the five-year plan have increased significantly. But, as before, the development of the fuel and power base is of decisive importance for the normal life of the city. Therefore in 1980 new capacities will be put into operation at the heating stations in Strogina and Fili in the amount of 240 gigacalories per hour, work will be continued on increasing the capacities of operating TETs's Nos 25 and 26 by 330 gigacalories per hour. The amount of gas consumption in the city is increasing, the consumption of electric power is rising. The rational use of fuel and power resources and the saving of heat, fuel and electric power are acquiring particular importance in this connection.

At the November (1979) CPSU Central Committee Plenum Comrade L. I. Brezhnev emphasized: "No matter at what rate we develop power engineering, the saving of heat and power will henceforth be the most important statewide task. Therefore it is necessary to incorporate in the plans increasing assignments on the replacement of obsolete, extremely power-consuming equipment, the acceleration of technical progress and the extensive use of energy-conserving technology, the increase of the heat retention of industrial structures and apartment houses. The efforts of every collective and every worker should be aimed at the saving of fuel and energy." The fulfillment of the 1980 plan will make it possible to increase the volume of centralized heat supply in the total balance of the city to 83 percent. Thus, the number of uneconomical low-capacity sources will be reduced to a minimum.

Questions of trade and public dining, personal and municipal services directly affect the broad masses of the population. In 1980 it is planned to put into operation 116 stores with 50,000 m<sup>2</sup> of selling floor and 140 public dining enterprises with 29,000 seats. Among the most important projects are the self-service department stores in Yasenevo, Kuntsevo, Otradnyy and Zelenograd, the Praga self-service department store in Chertanovo-Annino, the school-base dining rooms in Chertanovo and on Pervaya Khutorskaya Street and the markets in Dzerzhinskiy and Perovskiy rayons.

In personal services in 1980 it is planned to put into operation in detached buildings specially built for this combined enterprises, which include the dry cleaning of clothes and a self-service laundry, nine personal service combines, a custom-made clothing shop and several municipal service enterprises. It is proposed to open 165 personal service facilities on the first floors of apartment buildings. The sale of personal services to the population is planned in the amount of 352 million rubles.

The plan for 1980 also provides for the further development of all other sectors of the economy of the city. Once again it must be emphasized that its fulfillment requires that special attention be devoted to the adoption and implementation by production collectives of counterplans and higher socialist obligations. The efforts of soviet and economic organs, public organizations and labor collectives should be concentrated on the solution of the problems on the utmost increase of production efficiency and work quality. It is important to put into effect the available reserves and means for the acceleration of scientific and technical progress, the increase of the output and the improvement of the assortment and quality of products and the expansion of the production of consumer goods. It is necessary to try persistently to achieve the rational, economical use of all types of resources.

The steady increase of the material and culture level of the life of the workers was and remains the highest goal of the party economic strategy. The dynamic and proportionate development of social production is subordinate to this, this is the main goal of the 10th Five-Year Plan, the assignments of which are perceived by Muscovites as their own, immediate concern. The shock work at the start of its final year and the widely launched socialist competition for the successful fulfillment of the plans outlined by the party attest to this.

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#### Budget Status

Moscow GORODSKOYE KHOZYAYSTVO MOSKVY in Russian No 2, Feb 80 pp 7-8

/Article by Chief of the Moscow City Soviet Finance Administration Ye. V. Sofronova: "The March of the Final Year"/

/Text/ The Soviet people have begun the fulfillment of the assignments of the final year of the 10th Five-Year Plan. As a result of the implementation of the socio-economic program, which was elaborated by the 25th party congress, our homeland has made considerable progress in all the directions of the building of communism, the material well-being and the culture of the workers have increased.

The consistent implementation of the party economic policy is inseparably connected with the increase of production efficiency and work quality. In this connection new demands are being made on the management of the national economy, which was reflected in the decrees of the CPSU Central Committee on the further improvement of the economic mechanism and planning.

Like all the Soviet people, in 1979 Muscovites conducted an active search for reserves for increasing the output of products and adopted counterplans on the additional production of consumer goods and the increase of labor productivity.

The Moscow City Committee of the CPSU, the Moscow City Soviet, the rayon committees of the party and the rayon soviets directed the main attention of the managers and collectives of enterprises and organizations to the fulfillment of the production and financial plans set for them. The deputies of the planning and budget standing commissions and sectorial standing commissions of the city and rayon soviets of people's deputies gave much assistance in the realization of the budget. All this served as a good basis for the successful fulfillment of the budget of the city.

The budget of Moscow for 1979 was fulfilled for revenues by 103 percent and for expenditures by 100 percent. The fulfillment of the plan of revenues of the city budget, the budgets of all the rayons, Zelenograd and the settlements was ensured. About 21.6 billion rubles, including 180 million rubles in excess of the plan, were received by the union and republic budgets from enterprises and organizations of the city.

During the year the timely and uninterrupted financing of the measures stipulated by the plan and the budget was ensured. In all 140 million rubles in excess of the plan were allocated, including 21 million rubles for the capital repair and purchase of equipment for institutions of public education, 21 million rubles for enterprises of municipal and personal services, trade, public dining and hospitals, 27 million rubles for the construction of roads and vegetable storage places.

In speaking about the achievements in the development of municipal services, it is impossible not to note that not all the administrations and enterprises of the Moscow City Soviet Executive Committee are yet fully utilizing all the internal economic reserves in the campaign for the fulfillment and exceeding of the plan assignments. Some enterprises and organizations did not fulfill the plans on the profit, the sale of products, the increase of labor productivity and the reduction of the production cost of the items being produced. A truly practical, economical attitude toward the use of material, financial and manpower resources has not yet been achieved everywhere. Opportunities to raise the efficiency of work and to increase the amount of profit and revenues of the budget exist at many organizations and many enterprises of the Moscow Soviet. Their task is to reveal the reserves and to use them in order to successfully fulfill the assignments of the five-year plan as a whole. First of all this concerns the consolidation of cost accounting, the increase of the demandingness on the economic planning and

financial services for the timely and thorough analysis of the course of fulfillment of the state plans.

The session of the Moscow Soviet, which was held on 14 December 1979, approved the budget of the capital for 1980 for revenues in the amount of 2,548,000,000 rubles and for expenditures in the amount of 2,547,000,000 rubles with an excess of revenues over expenditures in the amount of 1 million rubles. As compared with the budget of last year it will increase by 4.4 percent.

When drafting the budget the main attention was focused on questions of intensifying the influence of financial and credit levers on the further improvement of the indicators of production efficiency and work quality, the most complete identification of reserves for the purpose of increasing the revenues and observing the policy of economy in the use of manpower, material and financial resources. This is aimed at providing the necessary assets for the further development of the economy of Moscow and increasing the material and cultural level of the life of the people.

The receipts of assets from state enterprises and organizations in the form of payments from the profit and the turnover tax constitute the bulk of the budget revenues. For 1980 they are envisaged in the amount of 2,358,000,000 rubles, or 92.6 percent of all revenues. The profit, as one of the main sources for the formation of the revenues of the state and the increase of payments to the budget for all sectors, is estimated in the amount of 2,116,000,000 rubles and as compared with last year is increasing by 3.7 percent. Of this amount it is planned to leave to the disposal of enterprises and organizations 611 million rubles, or 29 percent of the profit, for the further development of municipal services, the increase of the standards of internal working capital, the formation of economic stimulation funds and other expenditures.

The budget of the capital should receive from enterprises and organizations 1,667,000,000 rubles, including 564 million rubles from enterprises of trade, 302 million rubles from industry, 140 million rubles from construction, 210 million rubles from motor transport and 317 million rubles from housing and municipal services. The total amount of the internal working capital, on the basis of the volumes of the production of products, the commodity turnover and services, will be 1,754,000,000 rubles, which will ensure the normal operation of enterprises and organizations. The contributions to the economic stimulation funds of enterprises and organizations with allowance made for the growth rate of the sale of products and the profit by means of all sources are estimated in the amount of 330 million rubles, 12 million rubles more than in 1979.

The deductions from state taxes and revenues are an important source of revenues of the city budget. Their proportion in the revenues of the budget is 29 percent. The turnover tax, the amount of which in 1980 will be 7.23 billion rubles, holds the main place among them. In all 574 million rubles will be contributed to the budget of Moscow.

The receipt of the turnover tax depends directly on the fulfillment by industrial enterprises of the city of the plan of the production and delivery of products in the full amount and assortment. In 1979 individual sectors of industry and enterprises did not fulfill the set plan according to these indicators. In a number of instances they produced products, the quality of which did not meet the requirements of consumers. A large number of complaints were received due to the low quality of some types of fabrics, shoes, hosiery and other items of mass demand. This, as well as the output of goods of obsolete styles, aroused the dissatisfaction of consumers and caused the accumulation of goods at trade enterprises. As a result the finished products had to be reduced in price by many millions of rubles. To this it should be added that the production of goods for the public was not organized at many enterprises. Others produced them in a negligible amount and a limited variety. All this attests that the questions of fulfilling the plans of the production and sale of consumer goods, increasing their quality, as well as fulfilling the plan of the turnover tax should be constantly monitored by the executives of all sectors and the executive committees of the rayon soviets. On the other hand, the workers of trade should more actively influence production and try to achieve the output of goods which enjoy a demand among consumers.

The receipts of assets from the population on the basis of the planned wage fund are estimated in the amount of 1.27 billion rubles. The contributions to the budget of Moscow will be 132 million rubles, or 5.2 percent of all the revenues of the budget.

In conformity with the plan of economic and social development and the tasks of the transformation of Moscow into a model communist city 98 percent of the resources being allocated will be channeled into the financing of measures on the further development of municipal services and the improvement of the conditions of the work, daily life and relaxation of Muscovites.

Capital investments occupy a significant place in the total amount of assets being allocated for the further development of municipal services. In all 1,036,000,000 rubles of budget allocations and 318 million rubles of internal capital of services have been allocated for their financing. Of this amount it is planned to spend 762 million rubles, or 74 percent, on housing and municipal construction, the purchase of vehicles for urban transport; 133 million rubles on the construction of educational, cultural and health facilities; assets for facilities of the 1980 Olympics are envisaged; 16 million rubles for the construction of hothouses for growing vegetables for Muscovites in Stavropol'skiy Kray.

The fulfillment of the construction program stipulated in the plan of development of the city depends on how effectively the allocated resources are used. Unfortunately, the state of affairs in capital construction for the present is being improved slowly. The dispersal of capital among numerous projects and the failure to observe the standards of the duration of construction are diverting considerable assets into unfinished construction. But, after all, the increase of the effectiveness of capital investments

is largely governed by the timely and complete utilization of the equipment being delivered to the projects. Not all contracting organizations are yet observing the strict policy of economy of material and manpower resources and are waging a campaign for the increase of the quality of construction and installation work. Many of these shortcomings arose due to the fact that the Main Administration for Capital Construction so far has not assumed the functions of the main and sole client. Another 70 clients are operating here in accordance with the quotas of the Moscow City Soviet Executive Committee alone.

In order to improve the state of affairs in construction, it is necessary to establish a strong barrier to the dispersal of assets and to seek their concentration. It is necessary to step up the monitoring on the part of the institutions of the All-Union Bank for the Financing of Capital Investments and Gosbank, as well as of financial organs of the proper and effective spending of the assets being allocated to construction organizations for capital investments. The decree of the party and the government on the improvement of the economic mechanism, in which much attention is devoted to this question, obliges us to do this.

In 1980 the amount of financial resources being allocated for the further development of the sectors of municipal services will increase. Owing to this their financial status will be improved, the level of housing, municipal, personal and trade services of Muscovites will be increased. Thus, the expenditures on the maintenance of the water supply and sewage system have been increased by 11 million rubles. Additional assets will be allocated for the maintenance of the second section of the Novo-Zapadnyy Water Supply Station, the Vazuiskiy Hydraulic Engineering System, the Novo-Kur'yanovskiy Aeration Station, as well as the Central Pumping Station.

In order to improve the transportation service of the population it is envisaged to increase the expenditures by 6.3 million rubles. This will make it possible to increase the fleet of vehicles by 237 and to replace 1,775 buses, trolleybuses and streetcars with new ones. In all more than 92 million rubles are being allocated from the budget for the maintenance of urban transport.

In all 19 million rubles will be allocated for the development of local industry and 11 million rubles will be allocated for the expansion and renovation of personal service enterprises. The expenditures on the operation and repair of housing are envisaged in the amount of 469 million rubles, or 35 million rubles more than in 1979. The allocations from the budget for outdoor lighting of the city are planned in the amount of 11 million rubles. These assets are sufficient to ensure the operation of the operating lights and 3,400 new ones. It is envisaged to allocate 62 million rubles for civic improvement and 30 million rubles for the capital repair of roads, bridges and watercourses.

The financing from the budget of the expenditures, which are connected with the increase of purchase prices and the maintenance at the former level of

the retail prices for potatoes and vegetables, as well as with the increase of the standards of overhead expenditures, is planned in the amount of 113 million rubles. As we see, the assets stipulated in the budget and the plans of enterprises are considerable and should be used with the greatest benefit for the residents of Moscow.

In conformity with the state tasks the financial resources for the implementation of an extensive program of the development of public education and culture, the strengthening of the health of the Soviet people and the improvement of social security are constantly being increased. More than one-third of the expenditures of the budget of Moscow, 871 million rubles, are being allocated in 1980 for sociocultural measures.

The allocations for the development of public education will amount to 259 million rubles, 14 million rubles more than the 1979 plan. The financing of 19 new schools and the supply of free textbooks to the pupils of the first through fourth grades are taken into account among these expenditures. It is envisaged to allocate 2 million rubles for the free distribution of milk to pupils of the first through fourth grades. The allocations for the current maintenance of schools, as well as of groups with an extended day are estimated in the amount of 16 million rubles. The number of children studying in groups with an extended day will increase by 17,000. Moreover, assets have been allocated for the maintenance of five new sports schools and Houses of Pioneers and for the expansion of group work.

It is envisaged to spend 87.5 million rubles, 6.3 million rubles more than during the preceding year, on the children's preschool institutions of the capital. The group of kindergartners will increase by 12,000.

The amount for the financing of libraries, music schools, museums, theaters and parks of culture and rest will increase considerably. In all 25 million rubles, 5 million rubles more than in 1979, have been allocated for these purposes. Of them 2.6 million rubles will be allocated for maintenance of entertainment institutions, 4.3 million rubles for the maintenance of children's music schools and 3 million rubles for the restoration of cultural monuments.

It is planned to spend 490 million rubles on public health, which exceeds the 1979 plan by 26 million rubles. Some of these assets have been allocated for the maintenance of 13 new polyclinics and the improvement of the operation of public emergency medical service. In all 7.5 million rubles have been allocated for the free and concessionary dispensing of medicines in the case of the out-patient treatment of some categories of patients. Some 44 million rubles, which is 6 million rubles more than the 1979 plan, are being allocated for implementing social security measures.

The resources allocated by the state fully back the measures on increasing the level of sociocultural service of Muscovites. The task of the managers of budget-carried institutions is to deliver every rubles of the assets being allocated by the state to the population. In turn, financial organs

and banks should step up the monitoring of the rigorous observance of a strict policy of economy in the expenditure of the resources.

The budgets of the rayons and Zelenograd are taken into account in the budget of Moscow for 1980 for revenues and expenditures in the amount of 1,055,000,000 rubles. This will exceed the level of last year by 5.4 percent. Deductions from statewide revenues and taxes constitute the bulk of the revenues--724.6 million rubles, or 68.7 percent. In 1980 the payments from the profit of construction, municipal, trade and other enterprises and organizations, which are subordinate to the rayon soviets of people's deputies, have been increased by 30 percent and will be 281 million rubles.

Of the total amount 471.1 million rubles are being allocated for the further development of rayon services. The allocations for education, health, social security and physical culture will be 567.6 million rubles, that is, more than half of all the expenditures. The assets allocated for 1980 will fully back the measures outlined for this year on the further development of the economy and culture of all rayons.

Now, at the final stage of the 10th Five-Year Plan, on the threshold of the 26th CPSU Congress, the Soviet people clearly realize the importance and complexity of the forthcoming work. There is no doubt that this year the workers of Moscow under the guidance of the city party organization, by developing creative initiative and activeness and implementing measures on the fulfillment of the decree of the CPSU Central Committee and the USSR Council of Ministers, "On the Improvement of Planning and the Intensification of the Influence of the Economic Mechanism on the Increase of Production Efficiency and Work Quality," will fulfill the plan and the budget for 1980 and will lay a firm foundation of the 11th Five-Year Plan.

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#### Problems Need Attention

Moscow GORODSKOYE KHOZYAYSTVO MOSKVY in Russian No 4, Apr 80 pp 2-3

Article: "Work in a Leninist, Communist Way"

Text Several days remain until a memorable date--the 110th anniversary of the birth of Vladimir Il'ich Lenin. The Soviet people turn again and again to the source of the lucid ideas of Leninism. They learn from Lenin the art of understanding the complicated problems of the present and the creative solution of the imposing tasks of building communism and educating the masses. In our times there is not better a way to give the great leader of the revolution his due than to be equal to the requirements of the present and by one's own shock labor to make a worthy contribution to the implementation of the plans outlined by the Leninist Communist Party.

In the decree of the CPSU Central Committee, "On the 110th Anniversary of the Birth of Vladimir Il'ich Lenin," it is stated: "The preparation for and

celebration of the glorious anniversary are called upon to promote in every possible way the further development of the labor and public activeness of the people, the mobilization of efforts for the fulfillment of the 1980 plan, the creation of a good foundation for the successful start of the 11th Five-Year Plan." Many millions of people have made a special effort in honor of Lenin's anniversary. The workers of the capital launched socialist competition under the motto "The Personal Five-Year Assignment by the 110th Anniversary of the Birth of V. I. Lenin." The winners of the competition appear in this issue of the journal. Their achievements are clear evidence of the fact that the appeal of the party has found a national response.

Being in the forefront of the socialist competition, the leading enterprises of the capital also came forth with another patriotic initiative--to hold on 19 April a communist subbotnik dedicated to Lenin's anniversary. This appeal was taken up by the entire country. The collectives of enterprises, construction projects and institutions are ready to demonstrate on the day of the Red Saturday the greatest labor productivity, to exceed the mark reached earlier and to use saved raw materials and materials. The ideological unity and solidarity of the Soviet people, loyalty to Lenin's behests and devotion to the Communist Party and the socialist homeland are being displayed so vividly.

These qualities were fully expressed during the election campaign and the elections to the Supreme Soviets of the union and autonomous republics and to the local soviets of people's deputies, which were a public showing of the achievements of the Soviet people and a vivid demonstration of the triumph of socialist democracy. General Secretary of the CPSU Central Committee and Chairman of the Presidium of the USSR Supreme Soviet Comrade L. I. Brezhnev, who has gained the profound gratitude and respect of all the people by his untiring, productive activity for the good of the Soviet people, in the name of peace on earth and in the name of communism, was unanimously elected the RSFSR Supreme Soviet Deputy for the Bauman Electoral District of the capital.

Muscovites, like all the Soviet people, perceived the profound, brilliant speech of Comrade L. I. Brezhnev at the meeting with the voters of the Bauman District of the capital with a sense of patriotic pride in the achievements of our country. In it a thorough scientific analysis of the socio-economic transformations during the past decade and the present international situation was given, the goals and prospects of the building of communism and the campaign for a lasting peace and social progress throughout the world were outlined. It calls for new glorious deeds in the name of the beloved homeland and in the name of the triumph of communism.

But the tasks ahead are great and responsible. Therefore the role of the soviets of people's deputies, which constitute the political base of the USSR, is increasing immeasurably. The activity of the deputies is being organized in complete conformity with Lenin's instructions that the people's representatives should themselves work, should themselves implement

their laws, should verify what happens in life, should themselves be directly accountable to the voters.

And as Comrade Leonid Il'ich Brezhnev emphasized in a speech at the meeting of the Presidium of the USSR Supreme Soviet on 4 March 1980, "a great responsibility rests with the new body of the soviets--to be at the helm of the ship of state during the period of the preparation for the 26th party congress, and then during the period of the implementation of its decisions. This will be a time when we will take another step in the movement toward communism."

Since the very first days of work in the new bodies of the Moscow City and rayon soviets, their executive committees and standing commissions, the main administrations, administrations and departments, all the deputies have been called upon to fully utilize the rights granted to them and the assets at their disposal in order to increase the efficiency and quality of work, to persistently carry out the tasks set by the Communist Party and the Soviet Government, to constantly broaden and deepen the links of the soviets with the popular masses and to actively fulfill the mandates of the voters. Expressing the fundamental interests of the people, the mandates of the voters embrace key questions of economic and public activity. The concern of the workers about the efficient use of the reserves of the socialist economy and about the further improvement of housing construction, public health, public education and the operation of municipal services is embodied in them.

"The constantly increasing political and labor activeness of the broadest masses," it is stated in the decree of the CPSU Central Committee, "On the 110th Anniversary of the Birth of Vladimir Il'ich Lenin, "their participation in the discussion and decision of all public and state matters confirm the correctness of Lenin's conclusion that 'living, creative socialism is the creation of the popular masses themselves.'" The duty of the local authorities is to show consideration for all suggestions, to keep them constantly in view and to ensure their unconditional implementation.

Great tasks face the executive committees of the Moscow City and rayon soviets on implementing the mandates received during the last election campaign. The main one is to steadfastly implement the decisions of the 25th CPSU Congress, which are aimed at the strengthening of peace and security, the increase of the economic might of the homeland, the increase of the well-being of the people, the development of socialist democracy and the transformation of Moscow into a model communist city. Many mandates contain specific suggestions on the improvement of the operation of enterprises and organizations, the solution of urgent problems of economic and socio-cultural construction and the improvement of the service of the population. Many critical remarks were also made in address to the services of municipal and rayon service.

Here it must be said that the mandates received during the election campaign, the critical remarks and suggestions of the voters reflect the

shortcomings in the work of the main administrations, administrations and executive committees of the rayon soviets, including on the fulfillment of previously given mandates.

Take, for example, the completeness of the building up of territories. For a long time priority attention has naturally been devoted to housing construction as the main factor of the increase of the well-being. In the number of apartment houses built annually, as well as in the volume of construction of buildings on the basis of improved plans using items of the Uniform Catalog Moscow today outdistances many other cities of the country. In four years of the 10th Five-Year Plan apartment houses with a total area of 17.7 million  $m^2$  were built in the city, which made it possible to improve the housing conditions of 1.7 million Muscovites. Along with housing 23 hospitals with 5,600 beds, 51 polyclinics, 82 school buildings, 914 stores, dining rooms, cafes and restaurants and vegetable storage places for 200,000 tons were built.

Nevertheless in recent years a disproportion in the development of some sectors of municipal services and some microrayons being developed has formed. The placement into operation of projects of municipal services, cultural, personal, trade, medical and children's preschool institutions lags behind the rate of housing construction. This lag to a considerable extent is a consequence of the fact that the construction program in the city is annually implemented with a great strain. In two months of this year alone more than 50 construction, installation and specialized organizations did not cope with the plan assignments.

Taking into account that the builders are faced with great tasks, the managers of all the organizations involved in the construction conveyor of the city should display a more responsible attitude toward the matter, should concentrate to the utmost all the forces and assets on the assurance of the completion of the program of this five-year plan and on the creation of a safe margin for successful work during the 11th Five-Year Plan. The Main Administration of Housing and Civil Construction, the Main Administration of Industrial Construction and the Main Administration of Construction of Engineering Installations of the Moscow City Soviet should focus attention on the unconditional fulfillment of the plans of construction of housing, kindergartens, schools, hospitals, stores, automatic telephone exchanges and municipal service projects, as well as on questions of the renovation of industry.

The number of complaints about the work of housing operation and repair and construction organizations has not been decreasing. This has been caused by the fact that routine inspection and current repair are carried out irregularly at apartment houses, the dispatcher services at times are inattentive to the complaints of citizens and the filling of their orders, the normal grooming and cleaning of the grounds of the apartments are not being ensured. It must be regretfully stated that the capital repair of many buildings is being performed in violation of the deadlines, projects are being presented for delivery with unfinished work and defects. Reports on

the completion of all the necessary work are received during the period of the preparation of housing for winter. But winter comes and reproaches are received about leaks in the roof, the freezing of joints and exterior wall panels and troubles with electric supply and the elevator equipment.

Major blame here belongs to the executives of the Main Administration of Housing, the Main Administration for the Repair and Restoration of Housing and Public Buildings of the Moscow City Soviet and their organizations, which are not showing the proper initiative and persistence in the elimination of the existing shortcomings. This also pertains to no less an extent to the rayon soviet executive committees, which should promptly take effective steps. In the decree of the CPSU Central Committee, "On the 110th Anniversary of the Birth of Vladimir Il'ich Lenin," it is plainly emphasized: "Questions of the increase of the efficiency and quality of work in all the units of the national economy, the increase of labor productivity, the acceleration of progress, the improvement of planning and the management of the economy, the tightening up of good organization and discipline and the increase of personal responsibility for the assigned job should be at the center of attention of party, state and economic organs, trade union and Komsomol organizations."

Taking into account the importance of the improvement of the repair and maintenance of housing and the increase of the amounts of this work, the Moscow Soviet Executive Committee has outlined additional measures on the increase of the capacities of the Main Administration for the Repair and Restoration of Housing and Public Buildings and the Main Administration of Housing of the Moscow City Soviet both this year and in the future. The means of considerably increasing the level of the current operation of apartment houses and improving the cleaning and maintenance of the grounds of apartment houses have been outlined. Comprehensive proposals, the implementation of which should become the priority task of the rayon soviets, repair and housing operation organizations, have been drawn up on all these questions. Particular attention should be devoted to the selection and training of the personnel of housing organs, on whom the standards and efficiency in work depend to a considerable extent.

Along with this it is urgently required to increase the level of work in water supply and sewage services and fuel and power services, having in mind to improve the operation and maintenance of engineering equipment and to increase the standards and efficiency in the service of the population. So far it has not been possible to overcome the lag behind the needs of the city for the development of heat capacities and networks, the construction of electric power substations of deep lead-in and high voltage main circuits, the building and renovation of underground structures, water supply regulating centers and pumping stations. And all this is leading to irregularities in the supply of apartment houses and other facilities with heat, hot and cold water.

It is necessary to speak separately about the problem of urban transport. Its sectors during the years of the current five-year plan have undergone

further development. The Rizhskiy Radius of the subway has been put into operation, the Kalininskiy Radius is working. They improved the transportation service of the residents of Babushkinskiy, Kirovskiy, Kalininskiy, Perovskiy, Pervomayskiy and Zhdanovskiy rayons. But, as before, the situation with the assurance of the transportation of passengers in the micro-rayons of Yasenevo, Orekhovo-Borisovo, Bibirevo, Lianozovo, Degunino and several others remains tight. Overloading in the operation of vehicles is also being felt in the center of the city. It is hardly possible to consider it normal that up to 20 percent of the vehicles do not set out for some routes during the peak hours, which leads to large intervals in service and lines at the stops.

Recently the Bureau of the Moscow City Committee of the CPSU examined the question of measures to improve the transportation service of some rayons of the city of Moscow. A plan of measures aimed at considerably improving the operation of all types of passenger transport was approved. Their implementation depends on the organizing activity of the Urban Passenger Transportation Administration. The new body of the Moscow Soviet Executive Committee should also devote more attention to the solution of these problems. In particular, it is necessary to continue the construction of the Serpukhovskiy Radius of the subway from the new Serpukhovskaya Station to the Yuzhnaya Station with a length of 13.9 km, the Zamoskvoretskiy Radius from the Kashirskaya Station to the residential rayon of Orekhovo-Borisovo with a length of 9.8 km, it is also necessary to put into operation the Shabolovskaya Station on the Kaluzhskaya Radius of the subway. In 1980 with allowance made for the mandates of the voters 10 new routes of public transportation should be organized, the delivery of vehicles to the 30 operating routes should be increased and the construction of a streetcar line to Strogina should begin.

The increase of the amounts of work in the area of road construction is inseparably connected with the development and improvement of the organization of ground passenger transportation. In this connection it is necessary to step up the rate of construction of the third beltway, the renovation of the Moscow Beltway, the Dmitrovskiy Highway, the bridges in Strogina and Krylatskiy with the reconstruction of the access roads to them, as well as a number of other projects. All this is the priority task of the Moscow City Planning Commission, the Main Administration of Capital Construction, the Main Administration of Construction of Engineering Installations of the Moscow City Soviet and the organizations of the Ministry of Transport Construction. It is also necessary to seriously reorganize the work of the Main Administration of Road Maintenance and Public Services of the Moscow City Soviet on the capital repair of the asphalt surfaces of roads, the civic improvement of urban grounds and first of all the grooming and sanitation of the city.

In the accomplishment of the tasks on improving the operation of housing and municipal services an important role belongs both to the soviets themselves and their executive committees and to the standing commissions, the deputy groups and the apartment house committees. With their assistance

it is necessary to involve all Muscovites even more actively in the campaign for the preservation of buildings, the further development of the movement for a high standard of service and for the transformation of microrayons and apartment houses into model ones. For this purpose it is necessary to utilize better the citywide inspections on the putting of apartment houses, streets and microrayons into order, to enlist in this the forces and assets of sponsoring enterprises and organizations, to ensure the extensive participation in civic improvement work of labor collectives and the population directly. The All-Union Communist Subbotnik in honor of the 110th anniversary of the birth of V. I. Lenin should play a special role.

The fulfillment of the mandates and suggestions of the voters, which concern the improvement of services and trade, is no less a crucial section of the work. Here due to the inefficiency of the managers of a number of trade organizations goods, which are available in adequate quantities in warehouses and at bases, are absent at the stores, advanced forms are being introduced slowly. At public dining organizations the assortment is often not observed, the quality of the dishes being prepared is low. Many just reproaches are also being received concerning the operation of personal and municipal service enterprises, at which cases of an inconsiderate attitude toward customers have not been eliminated.

With allowance made for this it is necessary to step up even more the organizing activity which is aimed at the fulfillment of the adopted decisions and the assurance of the complete and timely implementation of the set plan assignments, and to increase the demandingness on the work of all the units of services. An important task of the main administrations, administrations and departments of the Moscow Soviet Executive Committee and the executive committees of the rayon soviets is to begin, without losing time, the fulfillment of the mandates and suggestions of the voters, which have been accepted for fulfillment, to achieve their unconditional accomplishment on the target dates and thereby to eliminate many shortcomings in their work.

Comrade L. I. Brezhnev emphasized at the meeting of the Presidium of the USSR Supreme Soviet on 4 March: "The tasks of increasing the efficiency and quality of labor, improving the management of the national economy and unconditionally fulfilling the plan assignments remain the key ones for us. The new body of the soviets has to do much in this direction." Utilizing the political and labor activeness of the masses, which was evoked by the elections and the preparation for a worthy greeting of Lenin's anniversary, it is necessary to successfully complete the assignments of 1980 and the entire five-year plan as a whole.

The CPSU Central Committee resolved to mark the 110th anniversary of the birth of V. I. Lenin as a great national holiday. In this the party is guided by Lenin's idea that the best way to greet a revolutionary anniversary is to focus attention on the immediate tasks which are raised by life. The open party meetings, which were held at the enterprises and

organizations of the capital, with the agenda: "Live, work and struggle in a Leninist, communist way," were also devoted to this.

And at the final stage to live, work and struggle in a Leninist, communist way means first of all to strive for the implementation of the decisions of the 25th party congress and the November (1979) CPSU Central Committee Plenum, the theses and conclusions, which are contained in the speeches of Comrade L. I. Brezhnev, to direct one's efforts toward the accomplishment of the tasks of building communism and toward the utmost strengthening of the economic and defensive might of the homeland. To live and work in a Leninist way means to devote constant attention to the development of our capital, its renovation, the improvement of its appearance and its transformation into a model communist city.

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## CONSTRUCTION

### FACTS SURROUNDING LEVY OF HEAVY FINE IN KAZAKHSTAN

Alma-Ata NARODNOYE KHOZYAYSTVO KAZAKHSTANA in Russian No 2, 1980 pp 35-38

[Article by A. Didenko, assistant professor at Kazakh State University: "Sanctions and Amenability"]

[Text] The CPSU Central Committee and USSR Council of Ministers' Decree "On Improving Planning and Strengthening the Influence of the Economic Mechanism on Increasing Production Efficiency and Work Quality" stipulates an increase in the mutual responsibility of clients, contractors and subcontractors for putting industrial capacities and structures into operation on time. In this regard, the goal of completely utilizing all legal controls during the construction process, including sanctions for breach of contract obligations, is becoming more urgent.

As is well known, completion of construction at a site on time and its quality depends not only on the work of builders but also on the client fulfilling his appropriate obligations such as relaying design and estimate documents, materials, articles and equipment to the contractor in the established period of time.

In particular, due to the lack of drawings, builders are not able to order the necessary materials and components on time for erecting a certain structure. Due to the fact that the appropriate agencies do not authorize on time work to be carried out in electric transmission line right of ways and in areas where underground utility lines pass, they are unable to start excavation for the foundation pit and trenches.

All of these are elementary truths. However, in practice the clients frequently violate the paragraphs of the contract obligations. Here is one example.

The Kazakh SSR State Board of Arbitration satisfied "Almaatastroy" Trust's suit against the UKS [Capital Construction Administration] of Alma-Ata's gorispolkom which asked that a penalty be exacted in the sum of 10,000 rubles. What was the main point of the case?

Special conditions in the general contractor's agreement stipulated the specific period of time in which the UKS had to ensure that the citizens, who were living in the housing units that were subject to demolition, were to be relocated so that the parcel of land could be set aside for construction. However, the client disrupted this time schedule and the trust was forced to rearrange its production program in a hasty manner.

In the above case, the arbitration board recognized the claims of the builders as being completely valid and the economic sanctions against the client played a positive role as a means of strengthening contract discipline. However, the plaintiff himself does not always, by far, come forward from a valid position. Sometimes the contractor simply attempts to grasp certain judicial statutes in order to get out of a complex contract that is not beneficial for him.

The Kazakh SSR State Board of Arbitration, for example, has reviewed the case of the suit by the "Sredazenergostroy" Trust in the USSR Ministry of Energy against the Chimkent oil refinery seeking to abrogate the contract to construct a TETs plant. As was established at the arbitration session, the cause that provoked the case was the lack of housing on the part of the client to accommodate the general contractor's workers. Of course, the client is obligated to help the contractor as much as possible, including with housing, but in the given instance, and the builders well knew this, the management of the enterprise under construction simply had no living space. The arbitration board, naturally, refused the suit having noted that since the client is not at fault there is no basis for abrogation of the contract. When reviewing the question of fulfillment of obligations it is accepted practice to assume the principle of responsibility for the guilt as the basis. There was no direct guilt on the part of the client but rather, as they say, it was his misfortune.

The USSR State Board of Arbitration has repeatedly explained in its instructional directions that questions of guilt are solved by taking all circumstances of the case into consideration. In addition to this it should be emphasized that economic legislation usually establishes the presumption of guilt on the part of the defendant who is considered guilty until such time that it is proved otherwise. Therefore, the party which pleads not guilty to violating a contract must present evidence of this and the arbitration board must carefully verify it.

It is helpful to remember that, according to the general rule, references by the defendant to the carelessness of his suppliers or designers, the non-issuance of means of transportation according to the limits of the transportation plan to the defendant, the lack or shortage of manpower, etc. are not circumstances which free him from responsibility.

At the same time practice shows it is these very factors that defendants most often refer to when attempting to prove their lack of guilt although it is their obligation to influence the associated parties who are not meeting their obligations.

An all-forgiving position in such situations is harmful. When a penalty is exacted the defendant has an opportunity to sue in turn, in regressing order, to pin the responsibility which has been placed on him on the organization that is really at fault in not meeting their obligations and to recover their losses. If the sanctions do not catch up with the real guilty party then not only does the non-guilty party suffer but the entire economic mechanism is thrown into disorder and state and contract discipline is weakened.

Close cooperation between the participants in construction production assumes a mutual material interest in appropriately fulfilling all of the contract obligations. Each party should not only undertake all of the actions that depend on them for fulfilling the contract obligations but also exert influence as stipulated by law on a careless partner. With the aim of strengthening state and contract discipline the arbitration board has been granted the right to increase (up to 50 percent) the amount of the penalty exacted and circulating the increased portion into the budget receipts if the defendant grossly and systematically violates the conditions of the contract. In exceptional cases, while keeping not only the interests of the defendant in mind but most of all those of the national economy, the arbitration board may reduce the amount of the penalty exacted.

For example, the arbitration board considered it possible to reduce the amount of the sanctions in the "Kazkhimmontazh" Trust's suit against the "Almaatapromstroy" Trust for failing to have an ATS [Automatic Telephone Exchange] prepared construction-wise for installation. The grounds? The penalty demanded exceeded the cost of work by a factor of more than 40! In addition, construction preparedness was provided upon the first demand of the plaintiff.

The most frequent violation is failure by the client to observe the time schedule for relaying design and estimate documents to the contractor. Paragraph 13 of the "Regulations Concerning Contract Agreements" lists those documents which the client must hand over to the general contractor no later than 1 September of the year preceding the plan year. According to the new procedure, beginning with 1981 plans for capital construction will include only those construction sites for which there are approved design and estimate documents as well as working drawings for the annual volume of work by 1 July of the year preceding the plan year.

Presentation of incorrectly drawn-up documents by the client (not coordinated or not approved according to the established procedure) is the same as not presenting documents and it does not matter if only one document is not presented.

For the above violation the penalty to the client is in the amount of 250 rubles for each day that presentation of the documents is delayed.

Paragraphs 14 and 15 of the "Regulations Concerning Contract Agreements" fixes the obligation of the client to hand over to the contractor documents that are required to draw up the drafts of the general or annual contract agreements for capital construction and also supplementary agreements for the second and successive years of construction within the space of 15 days from the day that the State Plan for the Development of the USSR National Economy is approved. Violation of this regulation entails a penalty for the client in the amount of 50 rubles for each day it is delayed.

The client bears the responsibility not only for the failure to provide design and estimate documents to a construction site. Failure to provide equipment that is to be installed to a contractor either on time or completely entails payment of a penalty. With a delay in providing equipment, materials and articles of 10 days the client pays a penalty to the contractor in the amount of 3 percent and, with a delay of more than 10 days, in the amount of 5 percent of the equipment, materials and articles that were not provided on time. For failing to supply the appropriate set of equipment that is to be installed the client pays a fine in the amount of 20 percent of its cost.

Such are the statutes concerning the responsibility of the client for breach of contract.

The Regulations Concerning Contract Agreements also establish various property sanctions against negligent contractors. The most important responsibilities of the contractor are to do quality work and complete construction on time. Legislation, unfortunately, does not specify property amenability for the simple fact of submitting a structure to be turned over that is of poor quality which is, in our view, a loophole. A penalty has been fixed only for failure to eliminate on time the unfinished work and defects that the contractor has allowed to occur and for disrupting the time schedules that are specified by the official certification of the workers' and state certification committees. It equals 100 rubles for each day of delay.

A case of this type is still common in arbitration practice. The "Almaztepromstroy" Trust, for instance, did not eliminate the incomplete construction work in the first phase of the "Vtorchernet" plant for about a half year, for which a penalty of 11,000 rubles was exacted.

The "Almatanel'stroy-6" Trust had incomplete work during construction of a boiler room and a 12-apartment housing unit. Despite repeated reminders the trust did not eliminate the incomplete construction work in the period of time indicated in the official certification of the workers' commission, for which 13,000 rubles were exacted from the builders based on the decision of the arbitration board.

The fact that directors of contract organizations frequently prefer to pay a fine rather than devote themselves to eliminating the incomplete construction on time attracts attention. It is thought that such cases would be fewer if a portion of the sanctions were shifted to specific guilty parties--to the persons who are directly guilty for the time delay in eliminating the defects. Labor legislation stipulates such a possibility (Article 118 of the "Kazakh SSR Labor Code").

In relation to disruptions in the time schedules for completing construction, the "Regulations Concerning Contract Agreements" for capital construction formulate the amenability depending on whether the reference is to the late completion of construction or to specific phases of work.

Late completion of construction for a site entails payment of a fine in the amount of 0.05 percent of the estimated cost of construction and installation work for the site for each day of delay, not to exceed 500 rubles per day.

If only the time schedule for completing phases of work is disrupted, then the contractor pays the client a fine in the amount of 0.05 percent for each day of delay, and for a delay of more than 30 days an additional penalty in the amount of 2 percent, of the estimated cost of such work apart from the fine.

Legislation grants the contractor an opportunity to demand reimbursement of the sum of the penalty for disrupting the time schedule for completing individual work in the event that all work is completed for the structure as a whole in the time period established by the contract.

In concluding contracts, questions often arise that are related to the possibility of fixing sanctions for violations that are not mentioned in the "Regulations Concerning Contract Agreements." In such cases the parties have the right to establish amenability in the contract which entails the application of sanctions. Legislation in the given case allows for taking the special features of the activity of the individual enterprises into consideration and to protect their specific economic interests.

Scholars in the law department of the Kazakh State University, after having summarized the disagreements between the contract organizations

in the Kazakh Ministry of Construction of Heavy Industry Enterprises, put forward recommendations concerning the inclusion of supplementary sanction agreements that are not stipulated by the "Regulations Concerning Contract Agreements" into the general contract.

The Ministry's legal service approved these recommendations and suggested to subdepartment organizations that they include corresponding paragraphs in the drafts of the texts for contracts and supplementary agreements. As a result of the more effective utilization of legal controls the ministry's contract organizations have begun to protect their economic interests more effectively from such violations on the part of clients as failing to transfer advance payments on time, handing over technical documents that are not broken down into phases of work and providing poor quality materials for which the legislation in force has not established sanctions. Supplementary paragraphs concerning sanctions have been included, for example, in the contracts with the clients of the Alma-Ata Housing Construction Combine.

It is understandable that supplementary sanctions are inconvenient for some. For example, the largest client in Alma-Ata--the Alma-Ata gorispolkom--year in and year out insists on excluding from the general conditions the paragraph concerning additional sanctions and is guided only by the amenability that is specified in the "Regulations Concerning Contract Agreements." Why do they attempt to insist on such a thing? There is only one reason--to obtain favorable conditions for one of the parties, namely, themselves. When the case applies to the other party then their position immediately changes to the exact opposite and the client actively attempts to protect his own interests. Then supplementary sanctions prove to be acceptable. For example, on the client's demand a paragraph was included in the contract between the "Almatapromstroy" Trust and the Alma-Ata gorispolkom's UKS concerning the fact that in the event that the contractor refuses to accept equipment at his job site warehouse (and this previously occurred repeatedly) he will pay the client a fine in the amount of 5 percent of the cost of the equipment for each instance of refusal.

However, how can the problem of introducing into the contract a particular paragraph that stipulates the inclusion of the mechanism of supplementary economic sanctions be solved if there is a disagreement between the parties?

Controversies about establishing such sanctions in the contract are settled by arbitration agencies which decide them based on the nature of the circumstances and on the economic expediency of additionally protecting the interests of a particular party.

It should, however, be noted that partners quite often do not make claims against one another at all, not wishing to spoil the relations between themselves. The client frequently signs the official certification for

accepting the site with serious defects and incompletely constructed work although it is well known that in the future the collective will have to be repaid by doing the installation work that is needed at the new developments immediately after the tenants move into the housing units. As a result of such a practice of mutual pardon, not only do the interests of individual enterprises and a group of the population suffer but also society as a whole.

The effectiveness of sanctions, in our view, is reduced by the statute which now exists in construction concerning the mutual cancellation of accounts payable and receivable for this obscures the actual picture, since then the financing results do not reflect all of their own violations. In addition the payment of sanctions from profits, a significant portion of which is transferred to the budget, signifies, in essence, the transfer of responsibility to the state's shoulders.

In our opinion, one of the measures for increasing the importance of the sanctions as a means of incentive to properly fulfill the contract is by placing a certain portion of them directly into funds for the material stimulation of enterprises that do not mutually cancel sanctions.

A fight against "amnesty," certainly, is being conducted and will be conducted by the arbitration agencies which regularly uncover cases of such a type on their own initiative. However, it is impossible to eradicate this phenomenon which exists in economic practice by the efforts of only one arbitration board.

Economic administrators should well remember the fact that an official response to any contract violation that is permitted by a partner is their legal responsibility. This is also a part of their important work to improve the economic mechanism.

In the CPSU Central Committee and USSR Council of Ministers' Decree "On Improving Planning and Strengthening the Influence of the Economic Mechanism on Increasing Production Efficiency and Work Quality" it is especially emphasized that in relation to delivery of the products that are specified by regulations or contract, sanctions are applied without fail for violating the contract obligations without mutually cancelling the sanctions.

Unfortunately, certain administrators do not know the existing legislation well or forget about it. When, for example, the arbitration board was hearing the case of the suit by the "Kazstal'konstruktsiya" Trust against the "Chimkentpromstroy" Trust to exact a considerable penalty, the representative of the defendant, as it may happen, was sincerely surprised that the responsibility of the contractor to draw up the official certification concerning the readiness of a structure for doing subcontract work is fixed, it turns out, by the standard instructions, and that violation of this can entail quite painful material amenability.

Here a question arises which cannot avoid attention, although in principle it needs to be reviewed more in depth. The point being made concerns strengthening the legal services of construction organizations and increasing the authority.

There is the know how in this country to increase the role of legal service to the level of present economic tasks. Take, for example, the legal work in the Ukrainian SSR Ministry of Construction of Heavy Industry Enterprises' system. In relation to the ministry's transfer to total cost accounting, its administrators see the activities of the legal service as a powerful means of preventing financial breaches which arise as a result of unpunished violations of plan and contract discipline on the part of their economic partners. Where earlier, under the conditions of budget financing, these damages did not have any kind of serious impact on the indices of the ministry's work, under the conditions of self-financing and total self-reimbursement, the cost-accounting mechanism itself already presupposes an increase in all kinds of exactings against the partners and does away with the widespread practice of "amnesty."

The Ukrainian republic bureau of the USSR Construction Financing Bank uncovered significant potentials in utilizing legal controls while precisely defining the sphere of the regulations that were made by the legal service for suppressing violations of state discipline in construction and the system for drawing up the required materials to be handed over for review to the corresponding agencies. And the result was not long in coming. Several oblast arbitration boards exacted more than 40 percent of the sanctions for disagreements that are related to capital construction based on the materials of the Construction Financing Bank institution. The Construction Financing Bank, as a controlling and independent agency, permits the effectiveness of economic sanctions, to be increased with an appropriate legal service organization, as a means of strengthening contract and state discipline.

Narrowing the differences between the economic interests of the client and contractor to achieve the final effect of the timely and qualitative conclusion of construction presupposes the strict observance of economic legislation by all partners and the necessity of utilizing the possibilities that have been put into the legal mechanism.

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## CONSTRUCTION

### STATE OF UZBEK CONSTRUCTION INDUSTRY REVIEWED

#### Problems Arise

Moscow STROITEL'NAYA GAZETA in Russian 23 Mar 80 p 3

Article by S. Amilov, chief of the Uzstroyindustriya Association of the Uzbek SSR Ministry of Construction (Tashkent): "Only in a Complete Set"

Text At the construction projects, where our ministry is performing work, about 1 million m<sup>3</sup> of precast reinforced concrete, 60,000 tons of metal components and 500,000 m<sup>2</sup> of carpentry items are installed annually. Last year we constructed from them an electric steel smelting works at the Uzbek Metallurgical Combine in Bekabad, new capacities for the production of mineral fertilizers at enterprises of Almalyk, Samarkand, Fergana and Chirchik, an oil extraction plant in Gulistan and a number of other major facilities. They were all put into operation on the target date to a considerable extent owing to punctual material and technical supply.

In recent years the Uzstroyindustriya Association, its Stroykomplekt Trust and all our enterprises have been devoting particular attention to this question, seeing in it an important reserve for increasing the effectiveness of capital construction. We began with the adoption of an automated system of the complete supply of projects under construction with precast reinforced concrete (ASU-ZhBI). Now the delivery of components to all the construction projects is regulated by this system.

We usually begin to formulate the annual plans of complete supply in October. On the basis of the draft of the plan of the contract and the available technical specifications the construction organizations draft a schedule of operations and determine the need for precast reinforced concrete. The schedules of complete supply are turned over to the Stroykomplekt Trust 65 days before the start of the quarter being planned.

Last year the enterprises of Uzstroyindustriya and its Stroykomplekt Trust delivered reinforced concrete components in complete sets to 934 projects under construction. This was during a time of great difficulties with the supply of the association with cement, metal and lumber.

Uzstroyindustriya was able in the shortest possible time to supply complete sets of components, for example, to such a very important construction project of light industry as the Andizhan Cotton Combine--a start-up project of this year. A similar enterprise in Bukhara, the caprolactam complex at the Elektrokhimprom Association (Chirchik), projects of the mining and metallurgical combine in Almalyk and many other projects were supplied with complete sets by the same method.

The operation of the ASU-ZhBI for five years is making it possible to conclude that project-by-project complete supply is a lever which is conducive to the most efficient use of material resources in construction and makes it possible to concentrate them where they are most needed at a given moment. At the same time the delegation of the functions of complete supply to computer hardware sharply reduces the proportion of manual labor.

Along with the ASU-ZhBI for the past two years the ASU-DOZ system of the complete supply of construction projects with woodworking items has been operating reliably here. Uzstroyindustriya has also entrusted to the Stroykomplekt Trust the functions of planning and the monitoring of delivery of complete sets of metal components.

This year is noteworthy for us also for the fact that the introduction of annual plans of complete supply on the basis of uniform project-by-project schedules for the entire construction period is beginning. In 1981 this efficient system will become mandatory for all construction projects of the republic and for all enterprises.

Unfortunately, it is not always possible to ensure a precise rhythm in this matter and to achieve the proper impact. The managers of far from all the construction trusts and administrations, the services for the preparation of production and the administrations for the supply of complete sets of production equipment are in a hurry to reorganize their activity and take the new requirements into account. They do not always carry out on time and competently the engineering study of the technical specifications, compile estimates of the need for components, the project-by-project schedules of complete supply and so on.

Last year was extremely difficult due to frequent interruptions of the deliveries of cement. In our opinion, the organs of USSR Gosnab in the republic and oblasts should ensure the anticipatory supply of construction industry enterprises with cement and rolled metal.

## Capital Construction

Tashkent STROITEL'STVO I ARKHITEKTURA UZBEKISTANA in Russian No 3, Mar 80  
pp 1-5

Article: "The Leninist Path of the Development of Capital Construction in the Uzbek SSR"

Text 22 April 1980 marks the 110th anniversary of the birth of Vladimir Il'ich Lenin. On the threshold of this anniversary all the Soviet people and all progressive mankind are paying tribute to the memory of and are expressing feelings of gratitude to the great leader of the working and oppressed peoples of the world, to one of the founders of Marxism-Leninism, to the founder of the Communist Party and the first socialist state in the world--V. I. Lenin.

Vladimir Il'ich devoted his entire life to the founding and development of Marxist-Leninist theory, the revolutionary struggle, the international communist and workers' movement and the building of socialism in our country. The name of Lenin is the banner of the struggle for the liberation of the workers from capitalist oppression and colonial slavery, the banner of the struggle for peace and social progress. In the appeal "To the Party. To All Workers," which was adopted on 23 January 1924 by the Plenum of the Central Committee of the All-Union Communist Party (Bolsheviks), it was stated: "Everything that is truly great and heroic in the proletariat--a fearless mind, an iron, inflexible, persistent, all-surmounting will, sacred hatred, hatred until death of slavery and oppression, revolutionary fervor, which moves mountains, infinite belief in the creative forces of the masses, enormous organizational genius--all this found splendid embodiment in Lenin, whose name has become a symbol of the new world from West to East, from North to South" ("KPSS v rezolyutsiyakh" The CPSU in Resolutions, Vol 2, p 534).

The formation and development of the Uzbek Soviet Socialist Republic, its transformation from a backward outlying colonial district of tsarist Russia into a highly developed industrial region with an advanced culture, science and technology are inseparably connected with the name of Lenin. During the years of Soviet power the Uzbek SSR in the fraternal community of equal nations of our country under the leadership of the Lenin's party has traversed a glorious path of its development. The socio-economic growth of Uzbekistan is a vivid example of the embodiment of the brilliant ideas and behests of the great Lenin. There is no area of the political, economic and cultural life of the republic, on the development of which the ideas of Vladimir Il'ich have not had a beneficial influence.

V. I. Lenin taught that "an immensely strong, historically great initiative and scope of the truly revolutionary class, which are filled with absolute

enthusiasm, are necessary" for the revolutionary transformation of the country (Vol 32, p 406).\* V. I. Lenin himself had such bold initiative and a revolutionary scope in his work in combination with a practical nature, strict scientific and sober calculation and effective practical leadership.

A thorough knowledge of the laws of social development and technical progress and brilliant revolutionary far-sightedness enabled V. I. Lenin in his works and speeches, in party and state documents and in practical instructions on the management of the national economy to specify the main means of the development of various sectors of social production.

V. I. Lenin assigned an important role in the socio-economic development of the country to capital construction. A number of theses of his works, the party and state documents signed by him, as well as his practical instructions on the organization and construction of the Volkhov and Kashira electric power stations and other important national economic projects attest to this.

On 23 February 1921 V. I. Lenin signed the decree "On the Unified Construction Plan," which for the purpose of unifying all construction provided for the annual approval by the Council of People's Commissars of a unified construction plan. On 13 May 1921 the program of construction for 1921 was approved by a decree of the Council of Labor and Defense. This was the first state plan of construction work in the country, which marked the beginning of the management of capital construction.

Attaching enormous importance to the construction industry, V. I. Lenin in a letter to G. M. Krzhizhanovskiy of 14 May 1921 proposed to single it out specially in the plan, immediately after the paramountly important heavy industry.

He considered the construction industry along with the production of construction materials and fuel a necessary condition for the industrial development of the economy. In the book "Razvitiye kapitalizma v Rossii" [The Development of Capitalism in Russia] V. I. Lenin wrote: "The development of an industry, which provides fuel and materials for construction projects and the construction industry, is one of the necessary conditions for the growth of a large-scale machine building industry (and an extremely typical companion of its development)" (Vol 3, p 525). In turn Vladimir Il'ich always regarded the industrial development of the national economy as a solid foundation for the building of socialism in our country. "The real and only base for the consolidation of resources and the creation of a socialist society," V. I. Lenin indicated, "is large-scale industry" (Vol 43, p 305).

In the industrial development of the backward outlying national districts of the country, as prerevolutionary Uzbekistan was, he saw the main means

\* Here and below V. I. Lenin is quoted from the complete collection of his works.

of eliminating the political and economic inequality of the former colonies of tsarist Russia. Before the revolution the industry of Uzbekistan as a result of the colonial policy of tsarism was at a low level and here heavy industry accounted for only 2 percent of its production. With the triumph of the Great October Socialist Revolution in conformity with Lenin's instructions the Communist Party and the Soviet state had to develop large-scale industry in the country first of all in its agricultural raw material regions. The extensive organization and planned development of industrial construction and the transfer of industrial enterprises from the central regions of the country to its outlying districts were necessary.

In the decisions of the 10th party congress, which was held under the direction of V. I. Lenin, "the gradual elimination of all the remainders of national inequality in all areas of social and economic life and, first of all, the planned placement of industry in outlying districts, by the transfer of factories to the sources of raw materials (Turkestan, Bashkaria, Kirgizstan, the Caucasus--the textile, wool, leather industries and others)" were set at the most important task ("KPSS v rezolyutsiyakh," Vol 1, p 560).

During the years of the civil war work was launched on the territory of Uzbekistan on the restoration and construction of industrial enterprises. In 1918-1920 in Tashkent on the basis of small machine workshops a metalworking plant, subsequently named imeni Lenin, was set up, semicottage enterprises were converted into transport machine and foundry machine plants: a paper, a sewing and a match factory and a soda plant began to be built; the construction of the Khilkovskiy Cement Plant was revived; the power station of the Tashkent Streetcar and the electric power stations in Fergana, Andizhan and Samarkand were restored; 20 ginning and 7 oil plants were restored and renovated and so on.

On the instructions of V. I. Lenin industrial equipment and construction materials were sent to the Turkestan Republic. In the summer of 1920 the complete equipment of a silk winding, a silk spinning and a silk weaving factory arrived in Fergana and Margilan from the central regions of the country. In the fall of the same year a cotton spinning factory and a tannery were transferred to Turkestan, while in 1921 the equipment of a textile and a writing paper factory and a celluloid plant arrived. Specialists, who came from Moscow, Ivanovo and other cities of Soviet Russia, worked at the construction projects of the Turkestan Republic.

Owing to Lenin's concern and the disinterested assistance of the Russian people significant gains in the restoration and the construction of new industrial enterprises were made in S. Turkestan during the difficult years of the civil war and foreign intervention. In 1924 on the territory of present-day Uzbekistan about half of the industrial enterprises has been already restored, nine new electric power stations, two metalworking enterprises, two sewing and one silk winding factories, a tannery, a confectionary factory and others had been built. Many old enterprises were renovated.

The commenced process of industrializing the national economy of the republic was accompanied by the priority growth rate of the capacities of heavy industry. As a result of capital construction in 1928 as compared with pre-revolutionary 1913 the fixed production capital of large-scale industry of Uzbekistan had increased twofold. Industrial construction assumed an even more extensive scale during the years of the five-year plans. The amount of capital investments in republic industry during the First Five-Year Plan was 3.5-fold greater than in 1924-1928, while 1940 alone in their amount exceeded the entire First Five-Year Plan. The fixed production capital of large-scale industry in 1940 as compared with 1928 had increased nearly 20-fold. During the years of the prewar five-year plans 1,250 industrial enterprises and shops were built in the republic, including the Tashsel'mash Plant, the Chirchik Electrochemical Combine, the Kuvasay Cement Plant and the Tashkent Textile Combine. New sectors of industry appeared, the first cotton harvesters were produced, the mining of coal in the city of Angren was begun.

During the years of World War II owing to the location of about 100 enterprises, which had been evacuated from the western regions of the country, and the construction of 280 new enterprises the industry of the Uzbek SSR was transformed into a mighty arsenal of arms, ammunition and military equipment. The Bekabad Metallurgical Plant imeni V. I. Lenin was built in 1942-1944 to meet the needs of the defense industry for metal. As a result of capital construction the fixed capital of Uzbek industry in 1945 as compared with 1940 has increased twofold.

Industrial construction reached an enormous scale and a high rate of development during the years of the postwar five-year plans. The implementation of the general policy of the Communist Party of a steady increase of the well-being of the people required the considerable expansion and retooling of the capacities of heavy and light industry.

In conformity with these requirements industrial construction in the republic assumed an unprecedented scale. During the years of the Ninth Five-Year Plan alone the amount of state capital investments in industry was 4.2 billion rubles, exceeding the Fourth Five-Year Plan by 13-fold. In 1979 25-fold more state assets were invested in republic industry than in 1940. Due to the construction of new enterprises and the expansion, renovation and retooling of operating enterprises the fixed industrial production capital during the past decade has increased threefold. During the postwar years more than 500 major industrial enterprises have been built, including the Almalyk Mining and Metallurgical Combine, the Gazli Gas Field, the Central Asia-Center, Bukhara-Urals and Bukhara-Tashkent-Frunze-Alma-Ata gas pipelines, the Navoi Chemical Combine, a petroleum refinery, a nitrogen fertilizer plant, a plant for the production of chemical fibers, an artificial leather plant and a shoe factory in Fergana, the Tashkent Shoe Factory, the Angren Combine of Rubber Items, the Bukhara Cotton Combine and the Namangan Combine of Silk and Suit Fabrics. Starting with the First Five-Year Plan, during 1929-1979 more than 1,300 major state industrial enterprises were built in Uzbekistan.

V. I. Lenin devoted infinitely great attention to the elaboration and implementation of measures on the electrification of the country and the construction of electric power stations.

In December 1920 in a report at the Eighth All-Russian Congress of Soviets Vladimir Il'ich advanced the well-known thesis: "Communism is Soviet power plus the electrification of the entire country." The plan of the GOELRO /State Commission for the Electrification of Russia/, which was drafted on the initiative of V. I. Lenin and was a far-reaching construction program of the development of the national economy on the basis of the electrification of the country, was adopted at this congress. The GOELRO plan, which was designed for 10-15 years, outlined the construction of 30 regional electric power stations with a total capacity of 1.75 million kW, which exceeded by 1.6-fold the prewar capacity of all the electric power stations of tsarist Russia (within the present-day borders of the territory). The GOELRO plan was fulfilled ahead of time by the Soviet people and in 1932 the capacity of the electric power stations of the country already exceeded the 1913 level by more than fourfold.

Lenin's ideas on the electrification of the country were of exceptionally great importance for Uzbekistan. Before the revolution six dwarf electric power stations with a total capacity of 3,000 kW existed on the territory of the republic, while the annual per capita generation of electric power was only 1 kWh as against 14 kWh on the average for Russia.

The Bozsuyeskaya GES with a capacity of 3,000 kW, which was put into operation on 1 May 1926 three months ahead of the Volkhovskaya GES, was the firstling of water power of Uzbekistan, which was built in conformity with Lenin's plan of the GOELRO. The Bozsuyeskaya GES was the first hydroelectric power station of the Soviet Union, which was built in accordance with Lenin's plan of electrification. It provided electric power to tens of industrial and municipal enterprises, streets, houses and urban transportation of Tashkent. The hydroelectric power station along with the Burdzharskiy Overfall solved the problem of rebuilding the irrigation system of the city. The placement of the Bozsuyeskaya GES into operation was a major event in power construction of Uzbekistan. This construction project became the first school of the builders and water power engineers of the republic, its experience served as the initial stage of the planned development of the water power resources of Central Asia. Following it thermal electric power stations were built in Samarkand, Bukhara, Kokand and Termez.

The total capacity of electric power stations in 1928 as compared with pre-revolutionary 1913 had increased more than fourfold.

The construction of electric power stations proceeds even more rapidly during the years of the prewar five-year plans, during which the Chirchikskaya GES's, the Tashkentakaya and Ferganskaya TETs's, the Kadyr'inskaya and Kuvaysinskaya GRES's, the Aktepinskaya and Burdzharskaya GES's and others were put into operation. In 1940 the total capacity of the electric power stations was 170,000 kW, having exceeded the capacity of the electric power

stations of 1913 by 57-fold. Electric power construction reached a truly enormous scale during the years of the postwar five-year plans. Such giants of electric power engineering of Uzbekistan as the Tashkentskaya GRES with a capacity of 1.92 million kW, the Angrenskaya GRES with a capacity of 600,000 kW, the Navoiyskaya GRES with a capacity of 800,000 kW, the Charvakskaya GRES with a capacity of 357,000 kW were built during those years. At present the construction of the Syrdar'inskaya GRES with a capacity of 4.4 million kW is being completed. By 1980 the total capacity of all the electric power stations of the republic was 8,211,000 kW, having exceeded 1940 by 48-fold.

In the Uzbek SSR as a result of power industry construction the brilliant foresight of V. I. Lenin has come true: "If Russia is covered with a dense network of electric power stations and powerful technical equipment, our communist economic construction will become a model for the future socialist Europe and Asia" (Vol 42, p 161). The industrial development and power industry construction of Uzbekistan became an example for the developing countries of Asia and Africa. The industrial products of the republic are exported to more than 60 foreign countries. In the per capita generation of electric power Uzbekistan has far outdistanced many capitalist countries of Asia and Europe.

V. I. Lenin assigned an enormous and important role in the socio-economic development of Uzbekistan and the leading sector of its agriculture--cotton growing--to irrigation construction. He wrote: "Irrigation is needed most of all and most of all will recreate the region, will revive it, will bury the past, will consolidate the transition to socialism" (Vol 43, p 200).

The development of irrigation construction in Uzbekistan is inseparably connected with the name of Lenin. While exercising the leadership of the Soviet state and its economy, Vladimir Il'ich devoted much attention to the solution of the problems of irrigating the lands of the Turkestan region. On 17 May 1918 V. I. Lenin signed the historical decree of the RSFSR Council of People's Commissars "On the Allocation of 50 Million Rubles for Irrigation Work in Turkestan and on the Organization of This Work." This directive of Lenin's outlined a program of major irrigation construction and approved a plan of measures on the irrigation of 500,000 desyatinas on the Golodnaya Steppe, 10,000 desyatinas of the Uch-Kurganskaya Steppe and 40,000 desyatinas of the Dal'verzinskaya Steppe and on the construction of a reservoir at the Duplinskiy Bridge on the Zeravshan River to ensure the flow and to release from under water 100,000 desyatinas of sown area, as well as on the completion of the irrigation system on an area of 94,000 desyatinas in the Chu River valley.

The civil war and foreign intervention, which were launched by White officers, local nationalists and Anglo-American imperialists and did enormous harm to the economy of Turkestan, hampered the timely implementation of Lenin's decree on irrigation construction. Agriculture experienced enormous difficulties. The areas sown in cotton as compared with 1913 decrease to nearly one-fifth, while the livestock population was cut in half. The

disorganization of the irrigation system was the main reason for this. The most resolute steps on restoring irrigation were necessary.

The decrees of the Council of People's Commissars on the restoration of cotton growing in the Turkestan and Azerbaijan republics, which were signed by V. I. Lenin, were promulgated on 2 and 27 November 1920. They obliged the Supreme Council of the National Economy and its local organs "to complete all the priority operations on putting irrigation structures into operation by spring 1921." The decrees called for extensive assistance to cotton growing farms with seed, agricultural implements and fertilizers. Experienced irrigation workers, engineers and agronomists were sent to Turkestan. As a result, in 1921 the irrigated sown areas of Turkestan had been increased by 660,000 hectares.

A new increase of the rate of the restoration and construction of the irrigation network was caused by the decree of the RSFSR Council of People's Commissars in February 1923, "On the Restoration of the Irrigation System of the Turkestan Republic," according to which considerable physical and monetary assets were released for the irrigation of Central Asia and a large group of irrigation specialists were dispatched. In 1923 work on 236 irrigation projects was performed on the territory of Uzbekistan, as a result in 1924 the area in cotton was increased twofold.

Lenin's decrees marked the beginning of the implementation of an extensive, steadily growing program of irrigation construction. During the Ninth Five-Year Plan the total amount of capital investments in water management construction as compared with the First Five-Year Plan increased more than 100-fold. Now more assets are being spent annually on irrigation and land reclamation than during all the prewar years. In all during the years of Soviet power the total amount of capital investments of the state and kolkhozes on water management construction has been 11 billion rubles. During these years 30 major irrigation canals with a total length of about 150,000 km were built and renovated and 15 major reservoirs with a total capacity of about 5 billion  $m^3$  were constructed. As a result of irrigation construction and the development of the Golodnyy, Dzhizakskiy and Karshinskiy steppes and other land areas 1.8 million hectares of new land were irrigated. Now about 100,000 hectares of land are irrigated annually, which is 2.5-fold more than the land area irrigated on the territory of Uzbekistan during the 50 prerevolutionary years.

Along with irrigation construction an extensive program of the technical equipment of agriculture and the construction of livestock barns, various storehouses and other agricultural structures was implemented in the republic. During 1924-1979 the state and kolkhozes invested 28 billion rubles in agriculture, which was more than 40 percent of the total amount of capital investments in the national economy. The material and technical base of the successful implementation of Lenin's plan of the cooperation of agriculture, the development of all its sectors and first of all the leading sector--cotton growing--was created as a result of capital construction. In 1979 the gross harvest of cotton in the republic as compared with 1913

increased more than 13-fold, while the total production volume of agricultural products increased 8-fold.

V. I. Lenin assigned an important role in the economic and cultural development of the country to transportation and communications. During the years of Soviet power in Uzbekistan a developed network of railroads and highways, air routes and communications lines with the appropriate technically equipped and comfortable buildings and structures was set up as a result of capital construction. The main network of railroads increased more than threefold, while the network of hard-surface highways increased 1,000-fold. Urban motor and electric transport is being developed rapidly. In 1977 by the 60th anniversary of the Great October Socialist Revolution the first section of the Tashkent Subway was put into operation in the capital of the republic. During 1924-1979 the total amount of capital investments in transportation and communications was 5.3 billion rubles, and nine years of the Ninth and 10th Five-Year Plans accounted for more than half of these costs.

In 1902 V. I. Lenin noted that production under socialism will be carried out "...to ensure the complete well-being and free comprehensive development of all the members" (Vol. 6, p 203). Vladimir Il'ich considered as one of the most important factors, which ensure the increase of the material and cultural standard of living of the people, the construction of apartment houses, nurseries and kindergartens, hospitals and other institutions of cultural and personal service. He considered housing with all the proper facilities as a necessary condition of the life of a person. Analysing the status of the workers of capitalist Russia, V. I. Lenin repeatedly indicated the wretched unsanitary housing conditions of the workers. A housing crisis, in his opinion, is an inevitable companion of capitalism. In the pamphlet "Materialy po peremotru partinoy programmy" (Materials on the Revision of the Party Program), which was written in 1917, he indicated: "...Only the elimination of the private ownership of land and the building of inexpensive and sanitary apartments can solve the housing problem" (Vol. 32, p 159). With the triumph of the Great October Socialist Revolution the Soviet state expropriated all the houses of the capitalist homeowners and carried out the mass settlement of workers in them.

In the program of the All-Union Communist Party (Bolsheviks), which was adopted at the Eighth Congress in March 1919, the goal was set: "...To strive as hard as possible for the improvement of the housing conditions of the working masses; for the elimination of the overcrowding and unsanitary-ness of old apartments, for the destruction of unfit housing, for the reconstruction of old ones, the adding on of new ones, which conform to the new living conditions of the working masses, for the rational settlement of the workers" ("KPSR v revolyutsiyakh," Vol. 2, p 57). This program goal, which was set in conformity with Lenin's instructions, determined the entire course of the development of housing construction, which became an object of the constant concern of the Communist Party and the Soviet state.

During the pre-war years apartment houses with a total area of more than 10 million m<sup>2</sup> were built in Uzbekistan. With the conversion of the national economy to a peacetime footing and the increase of its economic potential the amounts of housing construction have increased, the technical level and comfort of housing have risen. During 1946-1979 apartment houses with a total area of 124 million m<sup>2</sup> were put into operation in the republic. In 1971-1979 alone more than 5 million people improved their housing conditions. When moving into new state apartment houses all families receive individual well-appointed apartments, which have been furnished with modern engineering equipment.

Along with housing construction an extensive program of construction of a unified network of cultural and personal projects is being implemented in the republic. During 1924-1979 general educational schools for 4 million pupils, children's preschool institutes to accommodate nearly 400,000, hospital institutions with 36,000 beds, many tens of movie theaters, clubs, libraries and other cultural, health and personal service facilities were built and put into operation at state expense.

In carrying out the behests of V. I. Lenin on the industrialization of the national economy, the increase of cotton growing and the increase of the well-being of the people in the Uzbek SSR, a large program of capital construction has been carried out under the guidance of the Communist Party. During 1924-1979 the total amount of capital investments was 69 billion rubles. As a result of capital construction fixed capital worth 63 billion rubles was created, and the majority of it was put into operation during the years of the Ninth and 10th Five-Year Plans. Now, during the years of the creation of the material and technical base of communism and the further increase of the standard of living of the people, the role of capital construction in the socio-economic development of the country is increasing.

The Leninist path of the development of capital construction in the Uzbek SSR is the further increase of the amounts of industrial construction and the increase of the capacities of electric power engineering, which ensure the industrialization and electrification of the national economy; the constant increase of irrigation construction, the irrigation and development of new lands in conformity with the increasing tasks facing agriculture and its role in the all-union division of labor; the broad scope of housing and civil construction, which is aimed at the solution of the housing problem and the increase of the well-being of the population of the republic.

RIGHT: "Stroitel'stvo i arkhitektura Uzbekistana," No. 3, 1980

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IMPROVEMENTS IN CONSTRUCTION COST-ACCOUNTING ANALYZED

Interrelationships Studied

Moscow STROITEL'NAYA GAZETA in Russian 18 Apr 80 p 2

[Article by N. Fedos, candidate of economic sciences and chief of the NTIUP (expansion unknown) division under NIISt [Moscow Civil Engineering Institute] imeni V. V. Kuybyshev: "A Ministry on a Cost-Accounting System"]

[Text] The party and government decree concerning an improvement in the economic mechanism opens up good possibilities for union and union republic ministries to organize their activity under complete self-reimbursement conditions.

So that the transition to self-reimbursement will proceed in an organized manner and will have an effect on the national economy, right now, it is already necessary to analyze available knowledge, reveal the negative points and to try to avoid them in the future.

We shall begin with profit. As is well known, for cost accounting ministries and main administrations it is determined in direct relation to the construction commodity production realized. The decree specifies the following structure for this index: the cost of construction and installation work for the enterprise which has been turned over to the client, for their sections, starting complexes and structures which are being prepared to turn out products, and for services rendered. But at a large construction site the contractor cannot turn over commodity production to the client for a long time and subsequently obtain a profit.

A way out of this situation was found in practice. Calculations are made for the large phases of operations and the groupings are subject to payment and were included in the commodity production volume. A number of ministries that are carrying on construction of large structures for metallurgy, chemistry, and the coal industry persist in preserving such a system. At first, this approach was adhered to by USSR Gosplan. However, such a solution to the problem is unacceptable. It signifies a return to the old way--to accounting with installment payments.

It is very important that the structure of this index, which was established by the party and government decree, is maintained in the anticipated methodological instructions for planning construction commodity production. The incomplete portion of construction, irrespective of the estimated cost and duration, should not be found in the commodity production.

However, one cannot simply brush aside urges by contract organizations to include a portion of a large construction job in commodity production, for where else can funds be obtained for a current account? This urge is natural since a significant portion of a contractor's expenditures come exactly from those profits which are obtained by realizing commodity production.

It is difficult to count on the fact that construction organizations will manage to ensure a steady output of commodity production. Yet, at the same time, profits will steadily come in only in this case. This is related to the fact that, for now, the allocation of basic funds is planned primarily during the second half of the year. In order to realize commodity production at a steady rate Gosplan and ministry-clients must first of all plan the disbursement of fixed capital at a steady rate.

All expenditures by contract organizations for incompletely produced, as is well known, will be covered by the credit obtained from Stroybank [Construction Bank] irrespective of the estimated cost and the construction time. Thus, special problems should not arise here. As to the expenditures of contract organizations from profits--the following way out of the situation can be suggested.

Bonus funds can be created from unrealized profits by means of advance payment deductions. Such a system should be applied for other planned payments as well except for payments to the budget which should come out of realized profits. If a construction organization is not specified by the plan to realize commodity production in a certain quarter of year, then payments to the budget should be adjusted. In this manner, the total sum is not reduced by a single ruble and consequently the state does not suffer in any way.

The transition to planning commodity production and evaluating the activity of ministries according to this index will still lead to one fundamental innovation. It is specified that profits are to be planned according to commodity production and not according to a "lump sum." At the present time Gosplan, which is establishing the quota for profits, is reducing them, as a rule, by the amount of the difference between the wholesale and estimated costs for materials. In other words, if the plan for profits comprised 30 million rubles due to the contract activity of the ministry and the wholesale prices should increase by 5 million rubles during the planned period, then the plan for profits is established at 25 million rubles.

Such a methodology was acceptable when part of the expenses of construction ministries (for the development of a production base) was covered by the budget. This simply led to an increase in allocations from the budget in the amount that the profits were reduced. Under the self-reimbursement conditions for republic construction ministries and main administrations such a methodology is unacceptable since all expenses, including capital investments, should be covered by their own funds.

The Latvian SSR Ministry of Construction has been transferred to self-reimbursement since 1978. A year earlier its actual profits were 31.6 million rubles. But the planned transfer during the year reduced them to 23 million and in 1979 to 21.5 million rubles. In the meantime, based on calculations made by the ministry, the annual reduction in the profit balance due to the difference between the wholesale and estimated costs comprises five to six million rubles and is not compensated for by the budget. Last year the Ministry of Construction of Latvia was released from fees for funds and other payments to the budget in the amount of more than 11 million rubles (in comparison with 1977) and capital investments for the development of a base were reduced by 5 million rubles.

A simple conclusion suggests itself: until wholesale and estimated prices are able to be stabilized, as is stipulated by the party and government decree, it is necessary to change the system by which Gosplan works out quotas for profit balance for ministries and departments which are operating under self-reimbursement conditions, not specifying a reduction in the planned figures but rather compensation for the difference in prices.

For ministries and main administrations that are operating under self-reimbursement conditions, (annual) standards for deductions from the profits which remain at their disposal have been established for the five-year plan. A calculation method which is being used for the conditions of the Belorussian experiment has been made the basis for it.

Unfortunately, not everything, by far, that is good for industry is suitable for construction. No doubt arises about the fact that for a sector which is under complete self-reimbursement conditions, its own accumulated capital should cover the expenditures for expanding production. However, construction is a collective sector. There are a number of union, union republic and republic ministries and independent territorial main administrations in it. Every one of them has enterprises from various sectors comprising it.

How can one demand total self-support from republic ministries? Actually, the entire capital construction sector is not making a transition to operate under such conditions and not even the union republic ministries but only their units--the republic ministries and territorial main administrations. Due to the specialization and cooperation that has been coming about in the construction components industry (ZhB1 [Reinforced Concrete Industry]) a portion of deliveries are "set aside."

Economic practice supports the conclusion that it is impossible to demand complete self-support.

Such a situation will continue until the time that republic ministries will be completely transferred to total self-support. And in the meantime, the following system should be established. Since the republic ministries that are transferring to self-support cooperate within the sector, when determining standards for the deductions from profits which remain at their disposal, a special correction factor must be used. Its magnitude should be proportional to the amount of structures, components and materials that are "set aside." These expenditures should be covered by union republic ministry funds.

And finally, one last note. At present, the deductions for bonus funds in no way take into account the type of construction. That is, the contractor receives the same percentage irrespective of where the construction commodity output is realized: for a housing unit, an industrial enterprise, a social, cultural or everyday enterprise, etc. This system, which is logical at first glance, reduces the effectiveness of the plan as a management tool. While annually reviewing the actual fulfillment of the plan for putting structures and capacities into operation for the preceding year, Gosplan determines the sectors in which a disproportion has formed between existing capacities and quotas for product output. It is for just these sectors that fulfillment of the plan for construction commodity production has the greatest significance for the national economy. Evidently, introducing increased correction factors (10 to 20 percent) for such sectors for the deductions to stimulation funds of contract organizations makes sense.

#### Economic Mechanism

Moscow SOTSIALISTICHESKAYA INDUSTRIYA 24 Jan 80 p 3

[Article by T. Khachaturov, academician: "The Economic Mechanism in Construction"]

[Text] The editorial office is continuing publication of materials to aid those studying the course "Perfecting the Economic Mechanism." Today, academician T. Khachaturov, from our lecture bureau, is delivering a report. Previous discussions were published on 5 October, 2 November and 7 December of last year.

## The Basis of Development

Problems of improving capital construction were given significant space in the CPSU Central Committee and USSR Soviet of Ministers Decree "Concerning an improvement in Planning and increasing the influence of the Economic Mechanism to Improve Production Efficiency and the Quality of Work." It is especially important that their solution be considered as part of an interrelated system of measures aimed at improving effectiveness and quality and increasing interest and responsibility for the attainment of good end results.

Such a large amount of attention directed towards capital construction may be explained by its extraordinarily increasing role in the development of the socialist economy. The national wealth of the country (excluding land and forests) is now valued at more than 2.4 trillion rubles. The value of fixed capital is greater than 1.5 trillion rubles. Almost a trillion rubles were invested in the national economy in the time period since 1970. The capacities and structures which were built during these years are not passive property but production potential and the basis for the further development of the entire economy. But the results could have been even greater. An analysis testifies that deficiencies in capital construction restrain efficient economic growth and have become the cause of huge amounts of funds being spent that have not given full returns.

## Why Are Schedules Being Delayed?

Let's take, for example, the problem of incomPLETED construction. Its share is still growing. Where in 1965 its relationship to the annual volume of capital investments equaled 69 percent, it has now exceeded 85 percent. "IncomPLETED work" is especially great for industrial structures. Thus, for the energy industry it reached 127 percent of the annual volume of capital investments, for ferrous metallurgy 131 percent, for the coal industry 140 percent, and for the chemical and petrochemical industry 173 percent. As a result of this, more funds must be enlisted for capital construction than are needed for the annual initial operations of structures.

The construction time period for various structures is standardized depending on their type and output. These standards could not be called understated, especially if they are compared with actual construction periods for similar sites in, say, the U. S. or Japan. However, an analysis of the data on completed structures shows that only a few of them were turned over in the established period of time. This not only reduces the efficiency of the construction process itself but also has a negative influence on the economy as a whole. The products which are expected to be obtained from the capacities which are put into operation have been distributed in the supply plans

and funds have been disbursed for them. And, if they are not received on time, the normal operations of enterprises which hold the funds are complicated, their plans are disrupted and the economic activity of all the adjoining members in the chain is impaired.

Another reason that construction time is delayed is that capital investments are overextended. Measures have been taken more than once to review and reduce the number of structures which are being built. However, under the conditions where the capital investments are irrevocably financed by the state budget and the necessary stability has not been achieved in the plans, they have not provided the needed results.

In order to stop the practice of overextending capital investments it is planned that the amount of newly begun construction will be sharply curtailed. But the decisive factor is improving the stability of the five-year plan. It is exactly this that makes it possible to confidently plan the work of construction organizations with the aim of turning the plant over on time or ahead of schedule. To be sure, the stability of the five-year plan for capital construction with tasks being divided among the years presupposes the elimination of, or, in any event, reducing all types of corrections and revisions to a minimum. In addition, a stable five-year plan should balance all types of resources with the capabilities of construction and assembly organizations as well.

#### Coordination of Plans

Measures are also being taken to provide construction workers with materials, components and required equipment that are of high quality on time. Disruptions in the delivery of materials sometimes forces one to use materials that are of a higher quality where one can get by with lesser quality materials; incomplete delivery of required articles, poor quality and incomplete deliveries of equipment result in longer durations and increased expenses for the construction, installation, adjustment, and development of capacities.

The responsibility of enterprises in machine-building ministries and material and technological supply organizations is now being increased for complete deliveries of required articles, and supervising, installing and developing the equipment which they have delivered. The results of their management activity will be evaluated according to how the delivery plan is fulfilled. Applying obligatory sanctions is specified for disrupting it. In order to facilitate delivery of required equipment credit may be used: the general supplier is given bank credit before the planned period of time for delivery of all required equipment or its installation. After this period has ended credit continues to be given, but an increased percentage is levied.

There is still one more important condition for improving the economic mechanism in construction--coordination of the volume of work which is planned by each construction organization with their capabilities. For this, it is necessary first of all to determine the capability of each construction organization, that is, to give it certification. There should be information in the certificate about the availability and utilization of production capacities and about the organizational and technological level and other technological and economic indices that are required to work out five-year plans and annual plans. In accordance with them the volume of work for the five-year period and the year will be planned. With this it is not permissible to establish planned quotas based only on the dynamics of the corresponding indices which have taken shape.

The decree's position concerning the fact that operating production and new construction should be planned as a unified whole has important significance for ensuring balanced plans for capital construction. In this regard, capital investments will be allocated in the drafts of the five-year plans for the development of sectors that produce materials based on the planned volume of production and services. In the same manner this ensures the creation of new capacities that are needed by the sector for solving the tasks which have been given to them in the five-year plans. This also takes into consideration the needs of capital construction itself.

In order to plan production and construction as a unified whole, balance sheets and calculations for the utilization of production capacities and fixed capital will be worked out and will be included in the drafts of the five-year plans as well as composite plans for the reconstruction and technological reequipment of operating enterprises, including that which is done by means of funds for the development of production. Such balance sheets will make it possible to uncover the potentials of production capacities and provide a technological and economic basis for reconstructing operating enterprises. The most important thing is that a real possibility is emerging of placing new construction into a framework that corresponds to the real needs of the national economy. Funds for the construction of new enterprises and for expanding operating enterprises will now only be allocated in the case where the need for the particular product cannot be provided by operating enterprises even after reconstructing them. This will make it possible to limit new construction to a significant degree which now is extensive in nature, to concentrate capital investments on the least number of structures and to lay great stress on the use of new technology and the improvement of production efficiency and in intensifying it.

Great changes are being included in the system of evaluation indices for the work of construction personnel. Up to the present time it has been evaluated based on how the plan for capital investments is fulfilled, that is, as a matter of fact, based on the funds spent. The amount of funds for wages and economic stimulation depends on this. The plans for capital investments were fulfilled, funds were "assimilated," and the start of operations for sites lagged behind the plan by 20 to 30 percent and more for certain sectors. Now the economic activity of construction and installation organizations will be evaluated according to the production capacities and structures that are put into operation, the volume of construction commodity output, the growth of labor productivity and profit. The most important thing is not "assimilating" funds but turning over prepared structures.

#### Evaluation and Incentives

The adoption of a new evaluation system is related to the transition to an accounting system between clients and contractors for enterprises that have been totally completed and put into operation and for starting complexes, sections and structures that are ready to turn out products and render services based on the estimated cost of construction commodity output. Such a system of payment is similar to that which has been applied in industry--in the beginning products are made and then money is received for them. Advance payments to contractors are discontinued. Their expenses are covered by bank credit through client funds until the time period for turning over the site runs out. In case of necessity, credit continues but at an increased percentage. This should induce builders to turn over sites on time and ahead of schedule.

The amount of the bonus for starting the initial operation of production capacities and structures ahead of schedule is being increased to three percent of the estimated cost of construction and assembly work which has been completed on the average. These premiums, however, are paid by taking their quality into consideration: with an evaluation of "excellent" the bonus is increased by 10 percent; with an evaluation of "good" there is no increase in payment; and with an evaluation of "satisfactory" payment is reduced by 20 percent. If the time period for putting sites into operation is reduced by no less than 30 percent, the sum of the bonus is increased by 50 percent. If the time period is reduced by 20 percent the bonus is increased by 25 percent and if the time period for starting initial operations was lowered by 10 percent it is increased by 10 percent. When a site is put into operation ahead of schedule the contractor receives half of the profit from the client which is specified by the plan for the period by which construction time was reduced, but no more than 0.5 percent of the estimated cost of construction and installation work for each month that the construction time was reduced. This money is

placed in funds for the economic stimulation of organizations that participate in construction. It is permissible to pay bonuses to leading engineering and technical workers, employees and especially outstanding workers and foremen in the amount of up to three times their salary and wage rates.

Perfecting the economic mechanism is opening up broad possibilities for all workers in the construction and industrial complex. To achieve an increase in the level of all work, eliminate existing deficiencies, increase the efficiency of construction production and labor productivity and accelerate scientific and technological progress in construction are the pressing needs of the day.

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## METALWORKING EQUIPMENT

### PROBLEMS IN SOME SECTORS OF MACHINE BUILDING

#### Consumer Goods Affected

Moscow SOVETSKAYA KUL'TURA in Russian 22 Jan 80 p 6

[Article by I. Glin: "The Tail of the 'Comet'"]

[Text] It's annoying when a spot appears on pants or a skirt. But the problem can be corrected: We are all long accustomed to dry cleaning, although the majority of us have no idea how complex the machines are which undertake to give our things their original look back; that automatic control equipment monitors the chemical process used; that special steam chambers remove even the slightest wrinkle from the cloth; or that a conveyor takes our clothes through literally all the stages of processing and delivers them to the attendant's window. Nevertheless, all these complex machines and processes are hidden from the client's view. Still, everyone sees the needle, a common sewing needle threaded with a thick, hopefully coarse thread. Using it, a swatch of cloth is sewn to suits and coats, dresses and jackets, and on it all the essential data is noted: ticket number, number of the point where the order was taken, period for processing, quantity of items turned in, and even the source of the spot--the reason why the client had to turn to the masters of service. And so it is that this very needle has proven to be irreplaceable even now, in the stormy heyday of dry cleaning, so to speak.

However, automatic marking machines were imported from abroad as early as the beginning of the 1960's; with a press of the button they printed the necessary data on the material and smacked a marker on the item turned in for cleaning. They were placed in several shops. And there it was found that not only was the needle unnecessary--how should I say it--it even slowed down development of the service. Without it the attendants began working faster than ever. Where formerly one attendant could serve 250 people in a shift, for example, once the marking machines appeared the figure nearly doubled. That is but one side of the story. The other is that the clients began suddenly preferring to go to those shops that had the machines. What was it--was it hard for the clients to sew the marker on themselves? (We should mention, incidentally that it is most often not

the attendant, but the clients that do this.) Not at all--it was simply the level of service that they found attractive.

Briefly, it became clear that marking machines were simply essential. But there was no currency to waste on them! Since we had learned to make excellent, automatically controlled equipment ourselves, then we should be able to handle marking machines too!

The first such machines appeared in 1965, manufactured by the Kaunas Experimental Plant. But they turned out to be unwieldy, whimsical, and capricious. The pressing device on them either beat so hard that the machine nearly flew off the table or it just tenderly touched the staples (it is only through them that the marker is attached). However, more often than not the equipment failed altogether. It turned out that the equipment had to have a troubleshooter continuously in attendance. It is not surprising that these machines began to be rejected. They were withdrawn from production shortly, and the needle once again became the sovereign of the shops.

It is understandable that this situation could not long continue: there is but one signpost on the highway of technical progress--forward!

And so, in 1972 the special scientific research institute NITKhIB (Scientific Research Institute of Chemical Technology for Consumer Services) of the Ministry of Consumer Services for the Populace of the RSFSR developed the specifications for a new device. It was significantly more reliable than the previous one, easier to control, and what is more, it was to be based on a more modern operational principle: the marker would be attached not with staples (which left tears in thin cloth) and not even with acetone, as in foreign models (which is also not appropriate for all kinds of fabrics), but with a synthetic glue. The marking machine was born on paper--in sketches, tracings, and blueprints--but who would embody it in metal, who would manufacture it?

And now, dear reader, I ask your patience. In 1972 the story begins of the design's multi-year trip through purgatory. Each chapter of it could be designated either in years or by the names of the ministries to which the service workers turned. For correspondence and agreements are no simple matter. And now for how it all ended, that you will see now.

1973. The service workers referred to specialists in construction, road, and communal machine building. Why to them in particular? Because Minstroy-dormash is responsible for creating the production base for dry cleaning. But the ministry refused to build the marking machine, giving official notice that there was no place to accomodate the order: "In accordance with the specialization that has developed such equipment is now built by Minpribor of the USSR."

1974. The service workers referred to the address indicated. But the Ministry of Instrument Making, Automation Equipment, and Control Systems

responded: "The plants which could manufacture marking machines are completely occupied. We recommend that you refer to the Minlegpishchemash."

They did. "Our plants," answered the Ministry of Machine Building for Light and Food Industry and Consumer Appliances, "do not specialize in dry cleaning equipment. Refer to Minstroydormash."

1975. USSR Gosplan intervenes. With its help and after protracted conferences and persistent requests the designers build 3 prototype machines. Here a name for them appears for the first time--"The Comet"--a coding and marking machine. Henceforth that name would be attached to it forever. Three prototypes and a name--that is all that was really accomplished, and it turned out to be a long time before the machine would be put into production.

1976. The "Comet" story takes a new and curious turn. The sketches and experimental models landed in the Shadrinsk Plant "Polygraphmash." The Shadrinists put "The Comet" into serialized production.

What came of this is clear from the record of the acceptance commission: "The machine makes noise, vibrates, prints symbols poorly, and the scale on the heater does not correspond to the actual temperature." Such a response, we should remark, in no way distressed the Shadrinists, since for them this was "experimental" production. It was not even included in the plant's plan. And so, having easily undertaken the project, the plant just as easily dropped it.

Then, when the service workers beseeched the instrument builders to finish the project, the latter answered coldly: "Since it was a concern of Minlegpishchemash that began the production of 'The Comet,' refer to them." And such is the strange situation wherein seemingly no one is at fault, but there is no machine either.

Yet still, this story--which began, as we know in 1965--had to come to a conclusion sometime. And it did. How--we shall see a bit later.

But now, one small point of clarification. It is not by chance that the fifty union ministries were always mentioned along with the ministry involved in consumer service for the populace. The point is that the service industry lacks a machine building base of its own. The equipment for it is manufactured at the plants of other departments. And certainly, this is logical. It is the concern of the service workers to serve others well, and industry must provide the service system with the wherewithal to do so. But see what actually happens! Increasingly more equipment is required daily for consumer service: the number of services offered is increasing, and the demands with regard to their quality and the standard of service are growing. But the union ministries are not so very quick to reorganize their production: consumer-type machines are not their primary type of production but a collateral type, and not a very significant one at that. And if so, then one can afford not to hurry.

Several years ago experimental models were made of a machine which would stick any sole to a shoe in just seconds. But sterilized production of it has not yet begun at plants of the Ministry of Machine Building for Light and Food Industry and Consumer Appliances.

This same ministry has since 1966(!) been promising to build an electric brush for the sewing industry worker which would help remove bits of thread and traces of chalk from clothing sewn in their studios. But, as before, there is still no brush.

And as regards developing machines, not even an experimental model has been built, although the technical assignment to do so was made about 10 years ago. And so, photographic processing plants that handle tens of thousands of meters of film daily fiddle around manually with developing trays and water pipes, the way some mere photo hobbyist does in his laboratory.

In more than 8 years the Ministry for the Electrotechnical Industry has not yet begun manufacturing an equipment complex for repair of the electric motors used in refrigerators and washing machines.

Since 1974 the facilities of the Ministry for the Communications Equipment Industry have waited for the initiation of serialized production of 10 types of control and test equipment for the repair of color and black-and-white televisions.

And this sorry list could be continued...

Well, regarding the marking machines. After much intercession, many special orders, instructions, and much data was directed to Minpribor, the order was placed--finally--with one of the plants. Production of the machine, which should replace the needle and thread, is planned for 1980.

One could believe that, in the end, the dry cleaning industry was lucky, although "The Comet" had such a long tail, stretched out over many years. But can it be that just such an ordeal awaits the machinery for shoemaker and sewing industry workers, photographers and skilled radio repairmen too?

#### Heavy, Transport Machine Building

Moscow IZVESTIYA in Russian 12 Mar 80 p 3

[Article by S. Sambuk, chairman of the Chita Oblast People's Control Committee: "Protracted Reconstruction"]

[Text] As early as 1973 Comrade Zhigalin, the minister of Heavy and Transportation Machine Building of the USSR, issued an order which called for the reconstruction of the Trans-Baykal Plant for Lifting and Transportation Equipment. This concern is the only one in the country that produces electric suspension cranes with a weight bearing capacity of from 125 kg to 5 tons. But today the plant supplies less than half of the number

required: 10,780 units per year. The problem is that almost two decades ago it was placed on the site of the old railroad car depot of the Olovyanaya Station in cramped, unmodified buildings, and at an industrial site owned to this day by 7 organizations from different departments.

Chelyabgiprotyashmash (the Chelyabinsk State Institute for the Heavy Machine Industry), having taken into account the time constraints, worked out a design. Construction could be begun. But then it came out that twice the resources would be needed for the first phase of reconstruction alone as were planned for use in the entire plant. The Chitapromstroy (the Chita Industrial Construction) Association, referring to the weakness in its industrial base, refused to take on the additional load. Here Mintyashmash, as the main coordinator of the work, should have immediately eliminated the disagreement that had arisen, but it did nothing, and the state's assignment was disrupted.

The Ministry of Heavy and Transportation Machine Building reported in letters to the Chita Oblast Soviet of People's Deputies (10 August 1976) and to the Oblast People's Control Committee (25 March 1977) that: "Since USSR Gosplan has allotted an inadequate and transport machine building (LTM) in the draft of its major construction plan for 1976-80, it is not possible to envision work on reconstructing the LTM plant."

Let us clarify the situation. Actually, that high planning organization could not do otherwise, since the ministry had not yet confirmed the technical and economic basis for comprehensive reconstruction of the plant.

Seeking a way out of the situation, the plant's collective began expanding subsidiary production through its own efforts.

The Chita Polytechnical Institute sent its graduates to the plant. They headed a group of efficiency experts and skilled workers which built a production line in the welding and assembly shop and constructed a device for bending girders. The shops were slightly expanded.

But on the whole, do-it-yourself reconstruction proved ineffective anyway. Nearly 2 million rubles in appropriations remained unused.

The lag in machine building behind the needs of the economy was noted at the November (1978) CC CPSU Plenum, and it was stressed there that none of the new plants envisioned by a program to produce lifting and transportation equipment had yet begun operations and that it was primarily Mintyashmash and Minstroydormash which bore the responsibility for this failing; those agencies were in charge of implementing the program. It seemed that after such criticism the USSR Ministry of Heavy and Transportation Industry would take urgent steps to complete reconstruction of the Trans-Siberian Plant. But, alas, even today the state of affairs there has not changed.

Not long ago the plant received a letter from Minyashmash which stated that it was coordinating a program with Gosplan which "provides for an increase in the output of one-beam electric overhead cranes by 12,500 units." The plant workers learned from the same letter that in 1985 they would have to build 45,000 cranes rather than the current figure of not quite 11,000. But to handle such an assignment, it was essential to begin plant reconstruction immediately.

And the last thing. The Trans-Baykal Lifting and Transportation Equipment uses materials supplied from the Moscow area, the Urals, Khar'kov, Frunze, Barnaul, and Novokuznetsk; 85 percent of its finished production is sent back to these rayons. Unprofitable shipments of 20,000 tons of oversized metal structures are now on hand. Perhaps it would be better to provide for crane production for the western oblasts of the country in the west and taking into account the economy's ever growing need for cranes in Siberia, the Far East, and the Far North, fully switch the Trans-Baykal Plant over to the production of cranes for these regions.

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## METALWORKING EQUIPMENT

### EXPERIMENTAL RESEARCH INSTITUTE FOR METAL-CUTTING MACHINES

Moscow EKONOMICHESKAYA GAZETA in Russian No 5, 1980 p 16

(interview with V.S. Vasil'yev, director-general of the Experimental Scientific Production Association for Metal-cutting Tools in the column "Scientific Research Institutes and Design Bureaus in New Circumstances": "Complex Programs: the Road to the Future")

[Text] As is known, in accordance with the five-year plan more than 200 complex programs are being carried out to solve very important scientific and technical problems. In their research of today scientists are gaining valuable experience for tomorrow. The further development of this form of planning is envisioned in measures to improve the economic mechanism.

One of the organizations participating in the implementation of these complex programs is the Experimental Scientific Production Association on Metal-cutting Tools (ENIMB). V.S. Vasil'yev, doctor of technical sciences and director-general of the association, tells a correspondent from this weekly about the topic in the discussion below.

We have been called upon to implement 9 programs, in 4 of which ENIMB is assigned to be the executive agency. Our association is constantly constructing and subsequently introducing into industry dozens of various types of transfer machines and tools. Before, things would happen this way: While we coordinated the supply of component parts and mechanisms with other ministries' organizations, much time would be lost, the designer's idea would grow somewhat obsolescent and its novelty would be lost.

Coordination of the participants' actions acquired particular significance at the outset of the work on complex programs. The most correct distribution of responsibility and close, businesslike cooperation with the co-executors were discussed, since 43 scientific research organizations from

15 ministries were enlisted to build metal-cutting equipment alone, using fundamentally new electrophysical-chemical and combined methods (EPhChC). We were called upon to work with them in defining all the assignments related to this problem more precisely and in ensuring effective control. Since we lacked adequate experience, that was not easy to do.

The total planning of the periods and phases for the conduct of work throughout the chain--from scientific research to its practical realization--facilitates task accomplishment most of all. It became clear that certain tasks would even be finished ahead of schedule. Thus, we had to establish 5 sectors at the plants of Minelektrotekhprom in order to graphically confirm the calculations and advantages of the EPhChC methods. The equipment was manufactured, but control systems had to be built in order to fully exploit the technological processes. We could not afford to be slow. Specialists from one of Minelektromash's institutes successfully solved this very complex technical task.

I must note that total planning of these periods helped reduce the time spent going from idea to practice in the construction of a unique, super-accurate electroerosion copying and trimming device. It had no equivalent in our national tool building experience. When, together with our co-executors we analyzed all stages in the research, it turned out that the device could be produced in metal a year earlier than was planned. And so it happened. The Kaunas Tool Building Plant has already turned out an experimental lot of these devices.

But let us return to the program for building equipment based on EPhChC methods. It consists of 3 parts. The first includes the development of optimal technological processes and the production of stands for designing new tools. This is made the job of the organizations in Minstankoprom. Finding the requisite raw materials for the electrodes, which would be inexpensive and have a long service life, was assigned to USSR Mintsvetmet. Minelektrotekhprom studied the development of various generator systems which could be used in the devices.

ENIMS, acting as the executive agency for the project, set precise tasks for all the scientific research institutes and design bureaus. The periods for accomplishing them were defined on line charts. The scientific-technical society of the machine building industry provided us with great assistance. It established a society staff which included leading specialists in EPhChC methods. The co-executor agencies made socialist commitments to carry out a number of projects ahead of schedule.

The complex program envisioned, in particular, the development of a technological process for diamond-erosion grinding. The use of it aided in improving the quality of articles tooled from magnetic, hard, heat resistant alloys and non-corroding steels. Scientists from the Khar'kov Polytechnical Institute proposed the idea of diamond-erosion grinding. It was tested in the laboratories of ENIMS, the All-Union Scientific Research Institute for Diamonds, and the Superhard Materials Institute of the UkrSSR Academy of

of Sciences. The scientists' recommendation formed the basis for several models of the diamond-erosion polishing devices built by the Mukachevo Tool Building and the Leninakan Grinding Tool Plants.

Of course, because of the broad range of participants it is essential to regularly check on who is doing what, and where in the process of scientific research and design development there may be a danger of falling behind. Since we cannot forget that our knowledge of EPhChC methods for machining materials is not so vast yet.

Thus, every quarter we discuss the progress made, what problems were solved, and what is not yet accomplished. Briefly, the "bottlenecks" are revealed, and measures for overcoming the snags in work on the complex program are determined. Last year, acting according to a unified, total plan, we were able to master the production of electroerosion devices that use a new, digital, automated control system ahead of schedule. Positive experience is being gained in bringing the other programs in which ENIMS participates to fruition.

Of course, we cannot yet claim to be able to rapidly eliminate any kind of obstacles. They arise, in our opinion, basically because of deficiencies of an organizational nature. The USSR State Committee on Science and Technology to date has not invested the executive agency with the right to make final decisions on technical matters. We have little influence with our coexecutors.

The phases of the coordination process are still complicated when a certain party proposes a different solution to a problem than the one planned in the program. According to the new equipment plan Minelektrotechpron was assigned to develop an impulse generator for a new tool. Unfortunately, the one that was built was of complex construction and was expensive. After doing certain research, ENIMS proposed a simpler model. All involved--including the USSR Committee on Science and Technology--agreed that the second generator was more efficient but it took half a year to prove its advantages.

It is useful to include organizations subordinate to the USSR State Supply Committee among the participants in the programs. Why do we propose such a measure? While implementing a comprehensive program to build and master the production of tools fitted with self-adjusting and automatic control equipment based on EPhChC machining, we tested a new, effective working fluid. There was a tremendous requirement for this liquid because it was needed in almost all sectors of industry. The Salavat Petrochemical Complex mastered its production and proposed shipping it in 50 ton tank cars.

A given machine-building concern needs only a few tons of the liquid in the course of a year. What would it do with the remainder that was delivered in the tank car? This is from the letter in which the RSFSR Goskommefteprodukt answered our request: "In view of its low ton usage of the product in question Minstankoprom should provide for the material to be obtained

directly in railroad tank cars, with subsequent bottling and dispensing of it for use within the branch of industry." The answer was very evasive and vague. But, I repeat, we are not only speaking about the plants in Minstankoprom, but about other branches of industry as well. A large number of requests have now accumulated in ENIMS. They contain but one question: "Where can the liquid be obtained."

Thus, many questions related to the rapid implementation of complex programs have arisen. Solving them will allow us to reduce the periods needed for introducing the achievements of science and technology into industry.

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## METALWORKING EQUIPMENT

### REVIEW OF STANDARDS IN MACHINE-TOOL, TOOL-BUILDING INDUSTRY

Moscow EKONOMICHESKAYA GAZETA in Russian No 13, 1980 p 7

[Article by A. Kondrashov in the column "How Are New Methods Introduced?" "Among the Mediocre, At the Moment"]

[Text] A number of measures directed at raising the technical level and quality of production are defined in the decisions of the Party and government on improving the economic mechanism. One of the main ones named was a review of obsolescent standards for machinery and equipment, and inclusion among the new standards--along with other qualitative characteristics--of such demands as ensure a reduction in the weight of articles produced, a reduction in fuel consumption and energy used in operations, and the standardization of parts, subassemblies, and instruments as well.

The Ministry of the Tool Building Industry, like other branches of industry, is now updating its standards and technical specifications which are in effect. Last year alone drafts of 186 GOST (All-Union State Standards), 63 OST (Branch Standards), and 771 technical specifications were presented to Gosstandart for approval

The figures are inspiring, indicating that this work is actively underway in Minstankoprom. But what about the quality of the documents? Such figures as these give us pause: of the total number of drafts submitted 54 state, 60 (that is, nearly all) branch, and 318 technical specification documents were returned for further work.

"Without considering small errors connected with incorrect document format," stated V. Vinogradov, deputy director of the All-Union Scientific Research Institute for Technical Information, Classification, and Coding, "let us dwell on the most flagrant violations in the standards."

In the state standard presented by the Minstankoprom for laminar pumps the coefficient of useful work of the pumps varies from 62-91 percent, the weight is 80 kg, and the service life has been extended only to 1500 hours. Gosstandart could not, of course, agree to such a solution to the problem--the technical specifications were too low. What is more, because of indices

that were too low the economy was losing more than R2 million per year by producing these pumps. And a great deal of time was needed to make the standard more rigorous: the service life was lengthened to 2000 hours and the article's weight was halved.

Many more examples can be given of violations in norm technical documentation. For example, take the GOST on "Laminar Pumps With a Pressure of 25 Atmospheres." The standard refers to the pumps' broad usage—in equipment ranging from tools to permanent machines. However, the characteristics of the pumps' operation fail to meet modern demands, so they cannot be used, for example, in hydraulic systems.

Let us take the technical specifications for producing castings, which came to the scientific research institute from Minstankoprom for standardization of the mounts, plates, housings and supports used in machine building. While studying the documentation, you unconsciously think that the developers are not acquainted with measures being taken in industry to conserve metal. The margins for processing these articles are so great that a significant portion of the metal would be lost as trimmings.

One more set of technical specifications: for cutting machines. The basic properties that affect production quality are not practically indicated here. There is no data on strength of the housing, on play in the sides, or on the dimensions of the central apertures. Even a value for its guaranteed service life is missing. And that means that the manufacturing plant can, at its discretion, constantly violate production procedures for turning out these units. A cutter is a very accurate tool, but if you manufacture it to these specifications, you will hardly achieve the needed precision.

Many other violations can also be discovered by analyzing the normative-technical documentation submitted by Minstankoprom for approval. Including as standards qualitative indices which are too low ultimately lowers the technical level of the machinery and hardware produced in the branch of industry. And it is no accident that Minstankoprom, in terms of the proportion of its total production that bears the pentagonal emblem of honor, is firmly established among the mediocre.

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## METALWORKING EQUIPMENT

### STANDARDIZING TIMEFRAMES FOR BRINGING MACHINE BUILDING PLANTS ON STREAM

Kiev EKONOMIKA SOVETSKOY UKRAINY in Russian No 1, Jan 80 pp 25-32

[Article by V. Yamyshev, chief scientist of the Ukrainian branch of NIIPIN (Scientific Research Institute of Planning and Norms) under USSR Gosplan: "Several Questions of Standardizing Timeframes for Developing the Designed Capacities of Machine Building Plants"]

[Text] One of the pressing problems of the soviet economy is the timely development and more complete utilization of production capacities which have newly been put into operation. Its successful solution depends to a certain degree on improving the level of scientific and technological validity of the standardized timeframes for the length of time required to develop designed capacities which should be minimal, yet, at the same time, realistically achievable. At the present time, "Standards for the Length of Time Required to Develop Designed Capacities of Enterprises That are Put into Operation" which was approved by USSR Gosplan in 1974, are in effect for the industry. Ministries and departments, USSR Gosplan, union republic gosplans, and people's control committees systematically research enterprises with the goal of analyzing and uncovering ways to shorten the length of time required to develop enterprises and starting complexes that have newly been put into operation; however, development timeframes remain intolerably long. In accordance with the standards, timeframes for developing designed capacities at machine building plants that have newly been put into operation have been established at several months to three years depending on the features of the enterprise. Lengthy development timeframes reduce the effectiveness of capital investments and, as a rule, contribute to a reduction in the coefficient of utilization for the capacities in the subsequent period after the initial operation of the capacities.

What are the principal deficiencies in the standards and practices that are in effect for developing designed capacities of machine building enterprises?

First, a significant portion of the standards which are in effect for the industry are based on expert evaluations or statistical data

on development timeframes for the designed capacities of industrial enterprises, the actual duration of which, in practice, is affected by a large number of factors of a subjective nature during development. Under these conditions the product output volumes in certain segments of the planning period cannot characterize the degree of development for the designed capacities but only determine the degree of their utilization during a particular planning period.

The lack of methods that have been worked out for determining the quantitative value of their influence testifies to the impossibility of eliminating the effect of subjective factors on the duration of the development timeframe, and, consequently, to the unsuitableness of using statistical data on the length of time for development when determining the standard development timeframes for designed capacities.

Secondly, standards for developing designed capacities of enterprises which have newly been put into operation specify attainment by enterprises of projected product output volumes and do not stipulate attainment of the technological and economic indices, which are specified by the designs, as being among the development criteria, which testifies to the somewhat simplified evaluation of actual development.

In contrast to enterprises in the extractive and refining sectors of the industry, the majority of which may conditionally be considered to turn out a single product, enterprises in the machine building sectors of the industry are characterized by a multiple products list and by the impossibility of formulating their total capacity in any other way than by a cost expression. Together with this it is necessary to keep in mind that changes in the cost of materials, complementary articles and also their relative proportion of the total cost of articles are capable, to a significant degree, of changing the magnitude of gross (commodity) output and at the same time of bringing about a definite discord of the product output volumes in the cost expression for a particular segment of the planning period, which in turn entails changes in the product output volume in the cost expression with an identical level of utilization of an enterprise's production potential.

Thirdly, new and reconstructed enterprises are freed from charges for newly introduced capital during the standard time period for developing designed capacities. Such a procedure is natural, but only in the case where the standard duration of the development period is based on and corresponds to the time expended to develop capacities to a significant degree.

If the standard development times, due to the influence of a number of reasons including imperfections in methods for calculating them, prove to be overestimated then they become impediments to developing designed capacities since enterprises, which are interested in completely utilizing the favorable period in terms of fees for the capital and the level of capacity utilization, will not attempt to develop designed capacities ahead of schedule even when the necessary conditions will objectively exist.

Thus, the problem of working out scientifically valid standard timeframes for developing designed capacities has become pressing and its urgency is not doubted by anyone at the present time.

Relative to machine building enterprises, the development stage for designed capacities is an extremely complicated and dynamic process which changes depending on the type of production and other features of the enterprise, both by the sum total of the elements comprising it and by their duration. This substantially hampers the expression of the development process of the designed capacities in the form of a sum total of the elementary operations comprising it that can be related directly to standards.

Up to the present time, a sufficiently precise definition of the development process of designed capacities that characterizes it according to the interrelations of the operations which comprise it by considering the sequence and duplication in completing them has not been given.

At the same time, the structure of the combined operations for the development stage as well as its duration will depend on the definition of the process of direct development of the designed capacities.

The theoretical foundations of the problem of determining the process and standard duration of the timeframes for developing the designed capacities of machine building enterprises have not been sufficiently worked out and need additional research.

In addition to this it is clear that the characteristics of the beginning stage of developing designed capacities should be the initial basis which determines the production capability of an enterprise on the date that the act is signed by a state acceptance committee to put an enterprise into operation. The beginning stage of development can be determined on the basis of methodological and directive materials which determine the preparedness of a production site to turn out the list of articles specified by the design.

The following list of factors and processes are most often cited in the literature:

- complete staffing of enterprises with personnel that have the required qualifications;
- mastery of the production technology by all workers;
- attainment of the projected labor productivity;
- organization of an operative planning system, including starting consistent anticipatory work for the delivery of complementary products;
- setting up stable cooperating ties for the supply and marketing of products;
- elimination of the various organizational and technological troubles and defects in equipment operations, the lack of coordination in supplies which are inevitable during the formation of a new enterprise, etc.

Along with this the works of a majority of authors on the problem of developing the designed capacities of machine building plants are inclined to say that the process of manufacturing and introducing technological equipment should be included as an integral element in the development process of designed capacities.<sup>1</sup> In practice the initial operation and development of a majority of machine building plants support this opinion.

A number of authors, in particular V. S. Sominskiy, hold the opinion that the manufacture of all technological equipment and special tools should be done before the enterprise is put into operation for which it suggests that construction of auxiliary shops and services be done one to two years in advance of construction of the primary production buildings (shops).<sup>2</sup> This opinion is supported in practice by the construction of the Volzhsk and Kamskoye automobile plants.

Completion of the process of technological preparation for production (the design and manufacture of technological equipment and special tools) during the period preceding the initial operation of the enterprise should significantly reduce the time required to develop technological processes and designed capacities. However, such a procedure requires construction of tool shops and buildings ahead of time (one to two years in advance) or the creation of powerful specialized organizations for designing and manufacturing technological equipment and special tools in the sectors.

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1. I. A. Cherevko, M. T. Meleshkin, A. P. Sidorov, "Accelerating the Development of Designed Capacities in Industry," M., EKONOMIKA, 1967.
2. V. S. Sominskiy, "The Economics of New Production," M., EKONOMIKA, 1965.

Both of these conditions present serious problems in connection with the fact that the level of cooperation in machine building sectors of the industry at the present time does not allow one to hope for positive results in designing and manufacturing technological equipment and special tools elsewhere. Doubts arise about the probability of solving these problems in the coming years.

Therefore, the conclusion may be drawn of the necessity of including a technological preparation stage for production during the process of direct development of designed capacities for enterprises in a whole series of machine building sectors.

In this regard all machine building enterprises should be divided into two groups:

- the first group consists of enterprises for which the technological preparation stage for production will be included as an integral element in the development process;
- the second group consists of enterprises for which the technological preparation stage for production will not be included as a part of the combined operations for developing designed capacities but will be done simultaneously with the construction and initial operation of the enterprise.

Consequently, a classification of the machine building sectors, groups of enterprises, etc. which would determine the necessary degree of differentiation in the standard development timeframes for enterprises that have specific features (a type of production, complexity and innovativeness of the manufactured product, output volume, etc.) and which have objective influence on the duration of development timeframes for designed capacities should precede working out development standards.

The influence of the factors enumerated above should be taken into consideration either directly when establishing overall sector standard development timeframes or when correcting a standard development timeframe which has been established for the sector (or group of plants) as a whole with the aid of correction factors which take into account the specific character of individual enterprises.

In our opinion the process of developing the designed capacities of an enterprise, which determine the standard development timeframe, may be characterized by the combined operations and measures which objectively exist at each enterprise that is newly put into operation for developing the principal technological processes and for bringing labor consumption for the principal articles and the production program as a whole up to the projected value. It is comprised of:

- the design and manufacture of technological equipment and special tools specified by the designed technology for manufacturing the articles of the program;
- mastery of the machinery and equipment by all workers, i.e. mastery of the technological processes and their acquisition of the necessary skills for the work;
- attainment of the projected labor productivity by a principal portion of the workers;
- attainment of optimum coordination in the operations of the functional divisions and services of the enterprise's shops, introduction of a rational system of labor, production and management organization.

Under the conditions for adopting our formula, the dynamics of the situation can characterize the development process for designed capacities more objectively:

- labor consumption for the production program (the principal articles of the program);
- the composition of the production equipment;
- the composition of the industrial-production personnel.

Introduction of the technological equipment and special tools specified by the design and mastery of the technology of production by a principal portion of the workers will have a more noticeable influence on altering the labor consumption of the production program.

The dynamics of altering labor consumption for the production program is that general index which more fully characterizes the development process of designed capacities at a specific enterprise and the dynamics of attaining the technical and economic indices for the activities of the enterprise which are specified by the design.

Working out standards for developing designed capacities can be conceived of in the form of two independent stages.

First stage--determining the elements (operations) which objectively exist at each enterprise that is newly put into operation and that make up the process of developing designed capacities, standardizing the duration of its component parts, constructing a cyclical schedule for completing operations that takes into consideration duality and sequence of completing individual elements and determining the total magnitude of the standard development time.

Second stage--working out the correction factors for the differentiation in the standard development timeframe which has been determined for the sector depending on the characteristic features of a certain group of enterprises, type, production volume, etc.

Unfortunately, an analysis of developing designed capacities at a number of machine building plants has shown that a majority of enterprises is put into operation with substantial deviations from SNIP (Construction Standards and Specifications) and SN440-72 (Standards for Constructing Industrial Buildings, Structures and Sites) requirements, which has not made it possible up to the present time to present the development process for designed capacities in the form of a precisely formulated combination of operations while firmly fixing these operations in a timeframe and establishing the duration and sequence for completing them.

We shall examine several basic reasons which help to create a situation where the current data on the development timeframes for designed capacities of industrial enterprises cannot be used as the basis of the standard timeframes for the duration of development.

An analysis of developing the designed capacities of machine building plants that are located in the Ukrainian SSR territory has shown that the principal reasons which lengthen the development time for capacities of enterprises that are newly put into operation are deficiencies in construction practices for industrial enterprises such as disruption of the technological sequence for erecting the structures of the enterprise, the incomplete initial operation of capacities, various types of construction defects, etc.

A majority of the group of enterprises that were researched in 1976 were built in lengths of time that exceeded, sometimes to a significant degree, the standards of the corresponding parameters for constructing enterprises. For example, the Poltava "Khimmash" plant was under construction for more than 12 years although in accordance with the standards for the duration of construction for enterprises, buildings and structures (SN440-72) the timeframe for constructing such enterprises is limited to 3 years. Along with this, construction of the modular auxiliary shops was only begun at the time that the first two stages of the principal production building of the plant were put into operation in 1966.

Such a system of construction utterly contradicts the requirements of SN440-72 which specifies construction of auxiliary shops before the basic production shops (buildings) are put into operation.

The capacities that were put into operation during the reconstruction process at the Chernovtsi machine building plant were designed on the basis of a production program which does not correspond to the output program planned by the plant, which gives rise to the necessity of further reconstruction for the plant.

Under conditions where the capacities are put into operation with significant deviations from the design, enterprises are frequently able to achieve the production volume for the designed capacities in the cost expression ahead of schedule, yet sometimes they are completely unable to achieve the projected volumes without corresponding reconstruction.

A deviation in the actual components of the equipment and the products list in the production program from those specified by the design quite often is the reason for undeveloped designed capacities.

At the same time a change in the products list of the production program sometimes helps a certain enterprise to achieve not only the design values for the product output volumes in the cost expression but also a whole series of technological and economic indices which are drawn up on the basis of the total output of products.

An increase in the relative proportion of expensive complementary articles and materials in the manufacturing program, exceeding the projected number of workers and others can bring about the same result.

In those cases where the basic parameters of plants that are newly put into operation differ significantly from the designed parameters, the production capabilities of an enterprise that is newly put into operation should be characterized not by the magnitude of the designed capacities but by the calculated value of the plant's production capacities which may be derived after making calculations for the production capacities in accordance with the instructions that are in effect for the sector.

It should be emphasized that calculations of a plant's production capacities that are made in complete accordance with the instructions for determining production capacities characterize the production capabilities of enterprises to a greater degree of accuracy than the designers' extended calculations.

The composition and level of training of an enterprise's personnel has a significant influence on the pace of developing designed capacities.

It is obvious that selecting the full complement of industrial-production personnel before the enterprise is put into operation entails a reduction in a whole series of technical and economic indices, including labor productivity of enterprises and production associations. In a certain manner this may adversely affect the indices for the activities of the sector as a whole.

Research shows that a group of reconstructed and newly constructed plants has the greatest influence on reducing the average coefficient of interchangeability for the ministry.\*

\* V. K. Fal'tsman, Z. V. Zagrebina, "The Coefficient of Interchangeability for Equipment, Analysis and Planning, EKO, 1973, No 5, p 106.

In this regard, enterprises, as a rule, do not have the full complement of industrial-production personnel specified by the design at the moment that the capacities are put into operation and for a certain period of time after the initial operation which is visually confirmed by the data in the table.

**Number of Industrial-Production Personnel for a Group of Enterprises  
As Projected and on the Date of Initial Operation  
of the Designed Capacities**

Name of Plant	Number of PPP (Industrial-Production Personnel) (persons)		Number of Workers (persons)	
	As Projected	On the Date of Initial Operation of Capacities	As Projected	On the Date of Initial Operation of Capacities
"Uman'sel'mash" plant	3350	1437	2728	1143
Chernovtsay machine building plant	3843	3304	3191	2124
Kherson propeller shaft plant	3110	2100	2610	1614
Kherson combine plant	--	--	3109	3000

On the date of the initial operation of the capacities at the Zhitomir "Promavtomatika" plant only the production site was actually put into use. In the act by the State Acceptance Committee dated 23 December 1973 it was noted that the construction which was completed for the assembly and prefabrication building has substantial incompletely items: there is no sewage system or water supply, the finish work is not completed, not all of the sections are supplied with electricity, glazing has not been completed, doors are missing, etc. It should be noted that the design scheme which was worked out by the "Giproprorbor" (Orel) Institute, as well as financing estimates, were precisely determined only on 11 December 1973, that is, 12 days before the site was turned over for use, which undoubtedly affected the quality of construction. Thus, on the date that the plant was inspected in April 1976, that is, more than two years after the enterprise's initial operation, a portion of the crane beams did not work due to installation defects.

Substantial items were also incomplete during initial operation of the designed capacities at the Cherkassy "Stroymashina" plant and Kherson combine plant imeni Petrov.

The construction time for new and reconstructed enterprises that are in operation combined with the design time encompasses a long period of time for average-size enterprises, often exceeding 5 to 7 years. During this time changes occur in the structure and technological features of the equipment that is manufactured by the industry, improvement and changes occur in the technological processes as well as the products list and production program volumes that have been planned for the enterprise which is under construction. Often the articles that are specified by the design scheme are obsolete at the time of the enterprise's initial operation and do not meet modern day needs, and although they were used initially when the design was being worked out, they are partially, and sometimes completely, being replaced on the date that the enterprise is put into operation. As a result of this, the products list of articles that are manufactured by industrial enterprises that are newly being put into operation often differs to a significant degree from that which is put into the designs.

Such a situation is characteristic for a large portion of machine building plants that have individual and series types of production, especially for enterprises whose design and construction periods have exceeded those established by the standards.

The practice of putting an enterprise into operation in sections depending on the extent to which construction has been completed for a certain section of the shops, individual buildings and bays, which is widespread in machine building, is a factor that hampers analysis and standardizing development timeframes to a significant degree.

The initial operation of such sections which do not have starting complexes is not specified by the design and is determined by the section of the plant under construction that is finished at the end of the planning year. The initial operation of an enterprise in sections is undertaken, as a rule, in the instances where construction is delayed and may be explained by the desire to begin turning out products more quickly. However, the advisability and effectiveness of such a practice is not always evident and requires serious research and evaluation.

The practice of beginning operations for designed capacities in sections occurred at the Poltava "Khimmash" plant, the Chernovtsy machine building plant under the Ministry of Chemical and Petroleum Machine Building, the Kherson combine plant, and others which, as a rule, led to longer construction and development periods for the enterprises.

A different type of deviation from the requirements of SN440-72 and part III of the SNIP during construction and the initial operation of enterprises was due to a number of subjective and objective factors.

An insufficiently precise formulation of a whole series of paragraphs in part Sh-A-10-70 of SNIP played no small role in bringing about various deviations during development of designed capacities.

For example, according to SNIP requirements (§1.6), which are compulsory for all state, social and cooperative enterprises, organizations and institutions, production sites for which construction has been completed are approved by a state acceptance committee for use only in the case where the installed equipment has begun manufacturing the products that were specified by the design.

The output of finished products, even on a limited scale, more clearly testifies to the capability of an industrial site to manufacture the products specified by the design.

However, using this factor to characterize the basic capability of an enterprise to turn out a planned product is not valid in all cases.

First of all, the term "the commencement of turning out products" is not specific enough and depending on the sector to which the enterprise belongs, may be treated differently. For example, this would not cause problems for enterprises in the refining and extractive sectors since in practice extracting coal or refining oil is accomplished as a result of the combined technological equipment which functions from the first to the final element. In these cases, the output of products begins with the first hours that the enterprises are functioning. The validity of such an approach when evaluating the initial operation of enterprises that, for example, manufacture small series of articles with long production cycles (mobile excavators, seagoing and river vessels, etc.) is in doubt.

The commencement of turning out products for enterprises that produce seagoing vessels, etc. should coincide with the completion of construction even if it is the first ship, which requires quite a long period of time. In practice, this leads to the necessity of shifting the time period for signing the act which puts the enterprise into operation to a specific period that is equivalent to several production cycles which determine that a stable output of products has been attained by an enterprise. The commencement of turning out individual types of products in the production program for machine building enterprises with series and individual types of production also will not characterize the capability of an enterprise to turn out all of the products specified by the design with a significant degree of accuracy.

In addition, information regarding the commencement of turning out products is not specified to be reflected in the forms of the acts for approving equipment and the enterprise as a whole for use.

The absence of instructions on product output volumes allows an enterprise to confine itself to manufacturing experimental models of articles and at the same time to confirm the commencement of turning out products. At the same time, §1.9 of the same chapter of SNiP prohibits the use of technological equipment at sites that have not been approved by state acceptance committees which, in essence, contradicts the requirement of §1.6 which was mentioned above and testifies to the impossibility of commencing turning out products before the enterprise is put into operation.

Chapter Sh-3-76, §1.9 of SNiP, which went into effect in 1977, was retracted in its former wording and §1.13, which is similar to it, was put into effect in its place, which also prohibits the use of structures and equipment at industrial enterprises before they are approved, no longer by a state acceptance committee, it is true, but by a workers' committee which in practice does not greatly change the situation.

The presence of inaccuracies and contradictions in the methodological procedures for the initial operation of designed capacities was in some way the basis for a whole series of deviations from SNiP requirements in practice during the initial operations of machine building plants in previous years which, in turn, adversely affected the practice of developing designed capacities and had a definite effect on the duration of the norms for developing capacities which are based on statistical data concerning the duration of development timeframes.

The above cited facts that lengthen development timeframes due to design errors, incompletely items by construction workers and deviations from SNiP requirements are of a subjective nature and, consequently, should not be considered when working out standards for the duration of timeframes for developing designed capacities.

Thus, the conclusion may be drawn that the timeframe standards for developing designed capacities, which are based on current data concerning the length of time for developing enterprises that have newly been put into operation, are not progressive and require further perfecting.

On the basis of that which has been stated above as well as the provisions in SN440-72 and SNiP, the process of developing designed capacities for an industrial enterprise may be characterized by the totality of organizational-technological and social-psychological measures which ensure attainment of the designed values of labor consumption for the production program and labor productivity and, as a result of this, the designed production volumes.

The composition of the factors which determine the standard duration of the timeframe for developing designed capacities testifies to the great relative weight of the social and psychological processes, for which it is extremely difficult to determine the duration. In this regard, when determining the standard duration of the development cycle for designed capacities, it is more advisable to accomplish this by an empirical method on the basis of development timeframes for designed capacities of standardized enterprises that are carrying out initial operations and developing designed capacities in complete accordance with the design and SNiP and SN440-72 requirements.

When using the method which we shall call the standardized norms method for the length of time required to develop designed capacities, the stage at which sites are selected that are asserted to be among the standardized ones acquires especially important significance.

The standardized enterprise must meet the following basic conditions.

First, the process for developing designed capacities at standardized enterprises should proceed under conditions that rule out the possibility of influence by subjective factors: incompleted work by designers, construction workers, etc.

Secondly, the standardized enterprise should be representative of a group of plants that are similar in the technological and economic parameters for which the standards are being prepared.

Thirdly, the development process at standardized enterprises should be done under the conditions of the actual system for stimulating and controlling the pace of developing the designed capacities.

When observing the conditions cited above the actual length of time for developing the designed capacities of a standardized enterprise may be included among the standard timeframes for developing the designed capacities of a certain group of homogeneous enterprises.

Standard timeframes for developing designed capacities that are established on the basis of the length of time for developing standardized enterprises will, to a significant degree, be shorter than those that are in effect at the present time.

In turn, shortening the development timeframes for designed capacities has considerable potential for improving the efficiency of social production.

Working out and introducing scientifically valid standards for the duration of developing designed capacities into planning practice will make it possible to significantly shorten the timeframes for developing designed capacities and increase the utilization level of an industry's production potential.

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